
There's another way!
The mistake is that...
I've spotted...
I SEE REASONING - KS1
TASKS FOR ENRICHING MATHEMATICAL TALK
It's the same... but different...
I did it differently...
I can show you!
This picture shows...
The pattern is...
I've noticed that...
I SEE MATHS
by GARETH METCALFE
Instant digital download in PDF format

I SEE REASONING – KS1

Contents

I SEE REASONING – KS1

Tasks for enriching mathematical talk

Introduction

I See Reasoning – KS1 is written to provide rich, visual maths prompts to help build children's conceptual understanding. Open, varied images and tasks allow children to explore big mathematical ideas in KS1 maths.

Concepts are represented visually in ***'Read the picture'*** tasks. Attention is drawn to key ideas in ***'Spot the difference'*** prompts. Opportunities to deepen learning are presented in ***'Different ways'*** challenges.

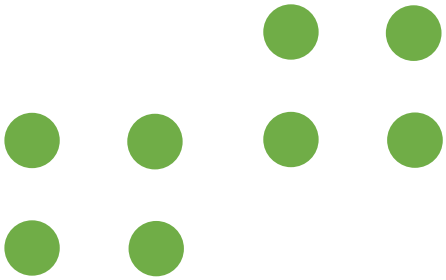
The resource is comprised of 281 varied tasks, linked to all areas of the KS1 mathematics curriculum. Screenshots of tasks can be used within presentations or printed and given to children.

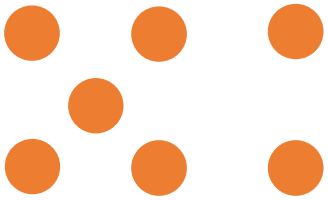
I hope that ***I See Reasoning*** enriches the maths learning in your classroom!

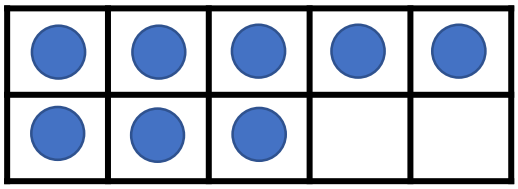
Gareth Metcalfe

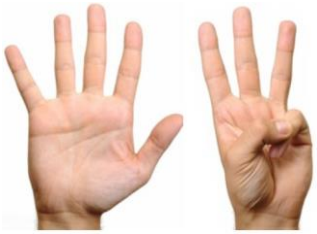
www.iseemaths.com

Odd one out

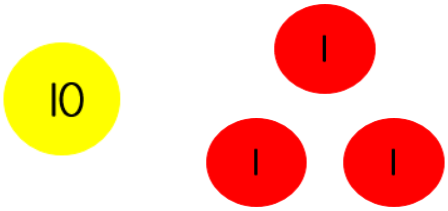


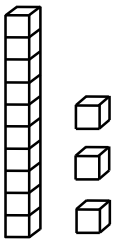


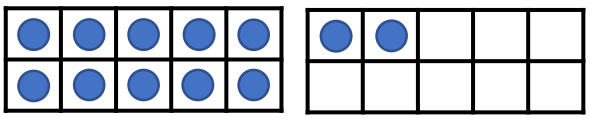


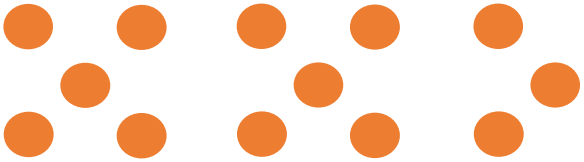


Odd one out

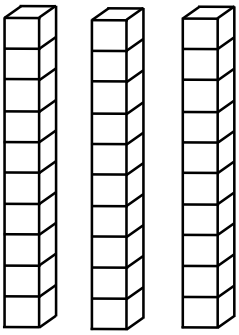


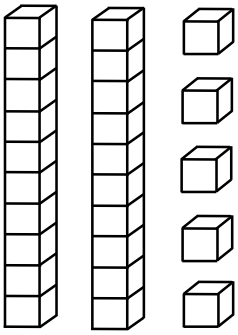




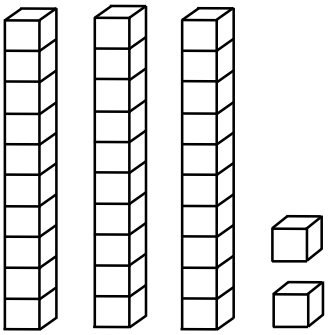


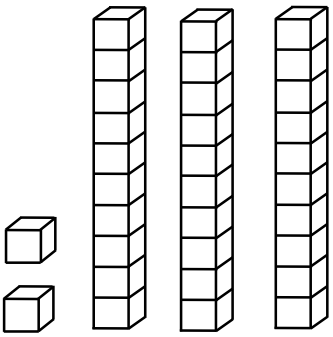
Spot the difference



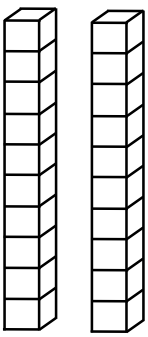


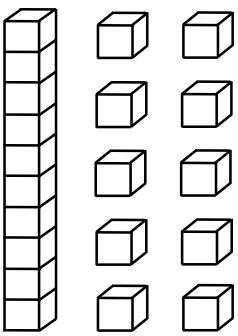
Spot the difference





The same… different…



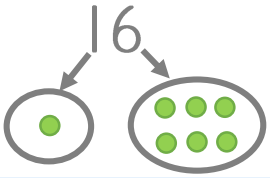


Is it sixteen? ✓ ✗

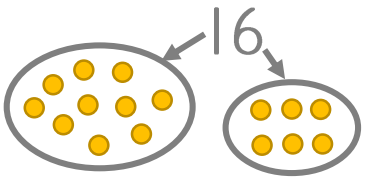
Is it sixteen?

61

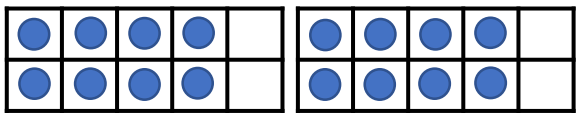
Is it sixteen?



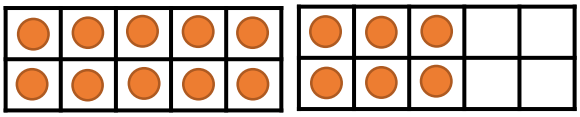
Is it sixteen?



Is it sixteen?

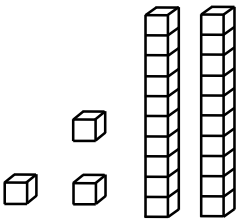


Is it sixteen?

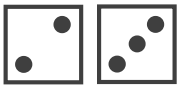


Is it 23? ✓ ✗

Is it 23?



Is it 23?



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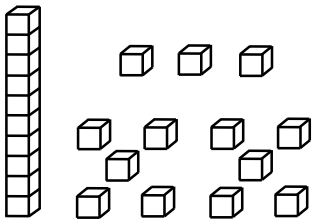

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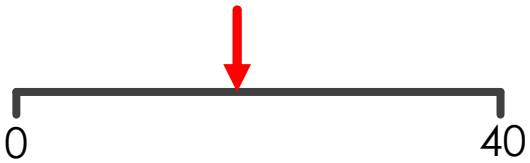

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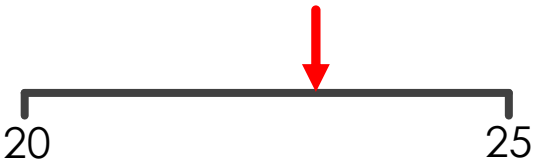
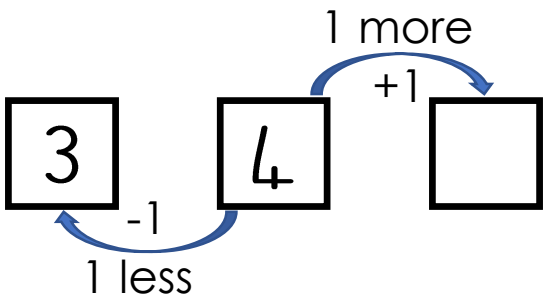
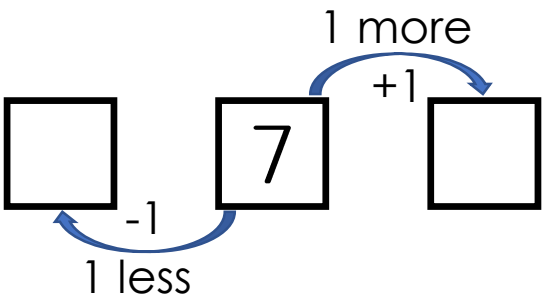
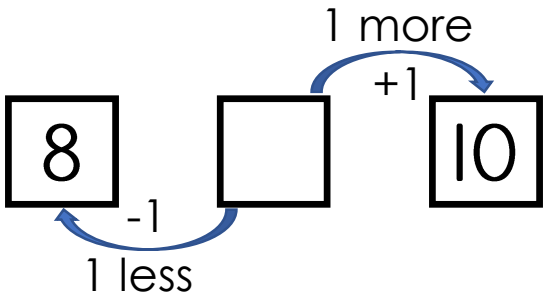
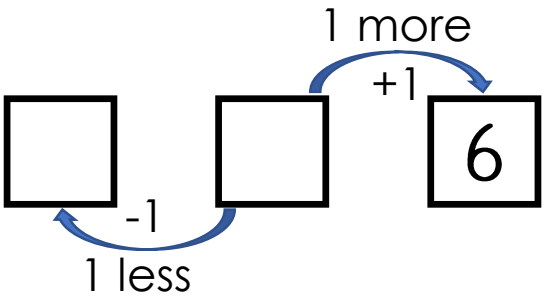


Fill the gaps









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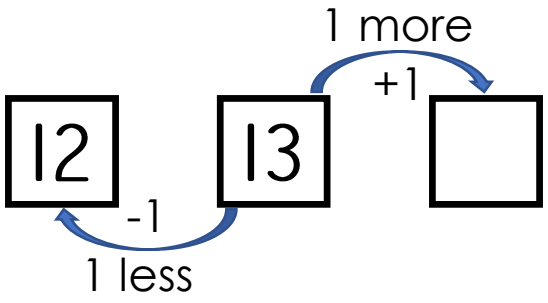

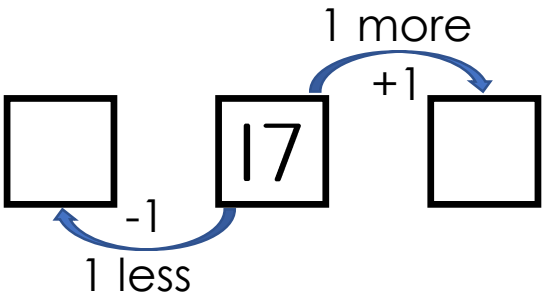

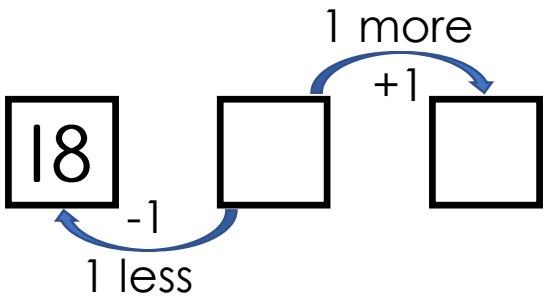

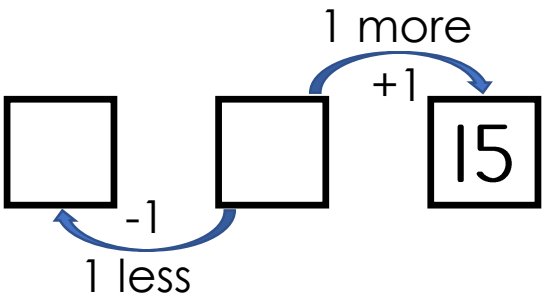

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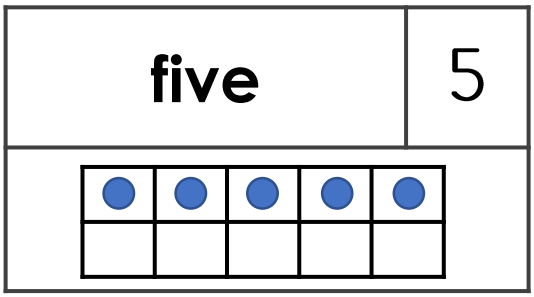
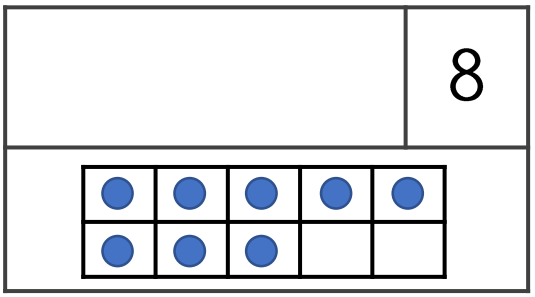
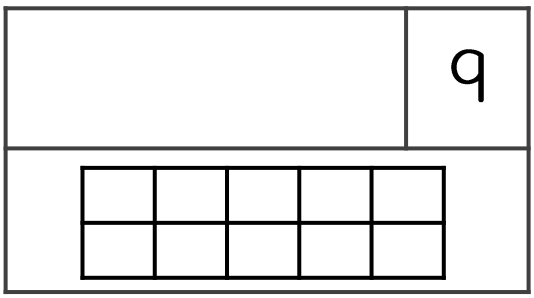
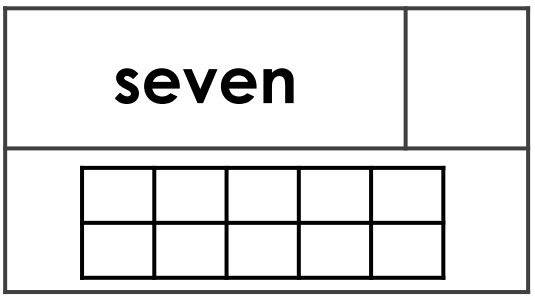


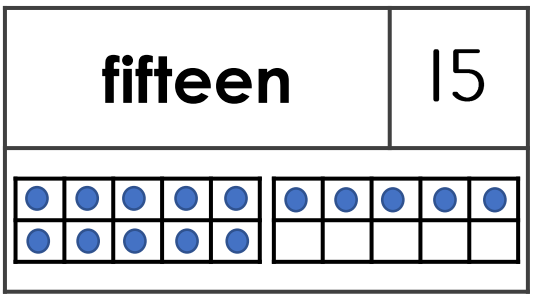


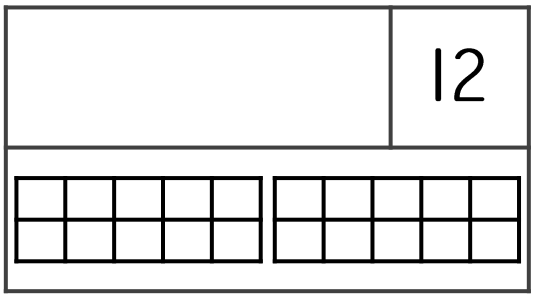


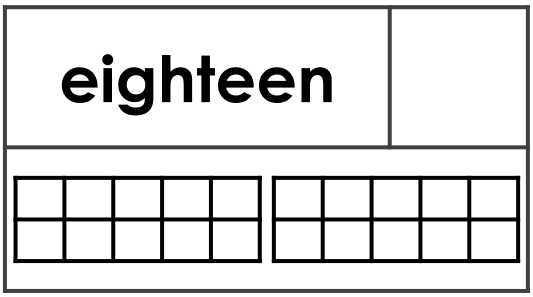


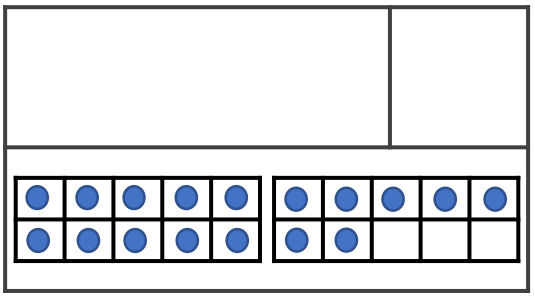
one
two
three
four
five
six
seven
eight
nine
ten

Fill the gaps





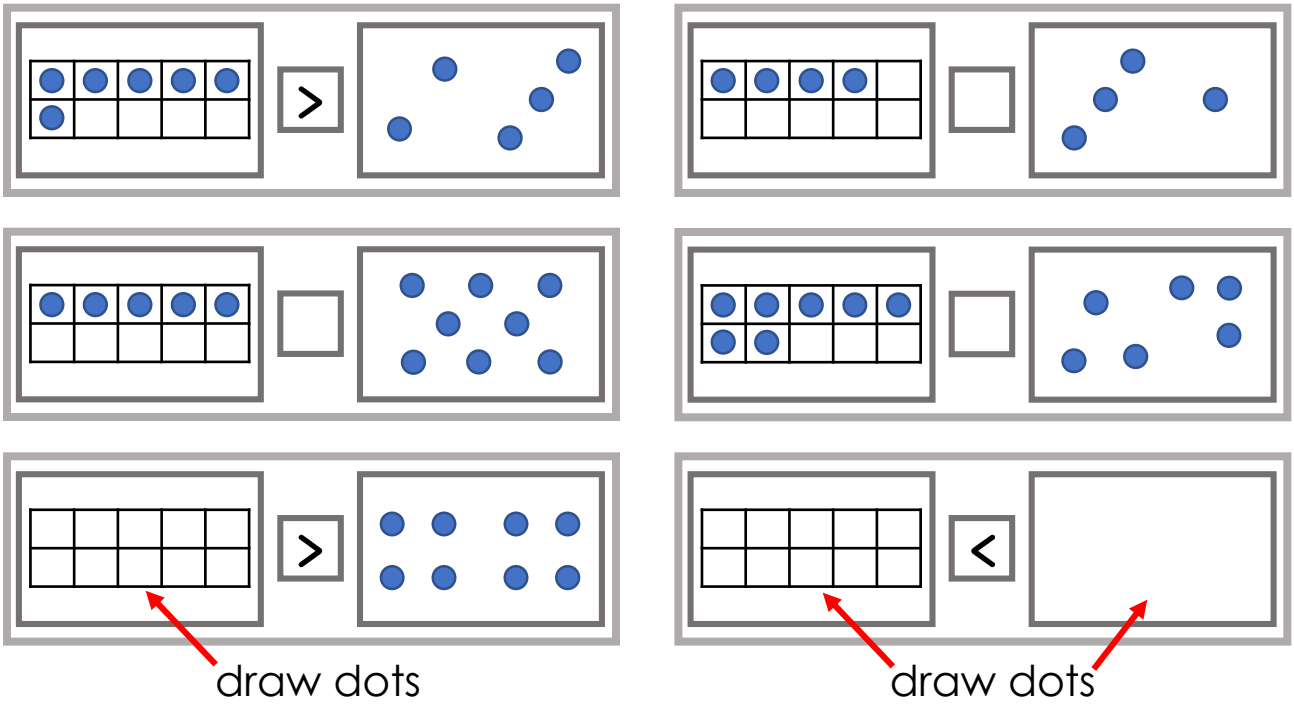




ten
eleven
twelve
thirteen
fourteen
fifteen
sixteen
seventeen
eighteen
nineteen
twenty

Fill the gaps

> < =



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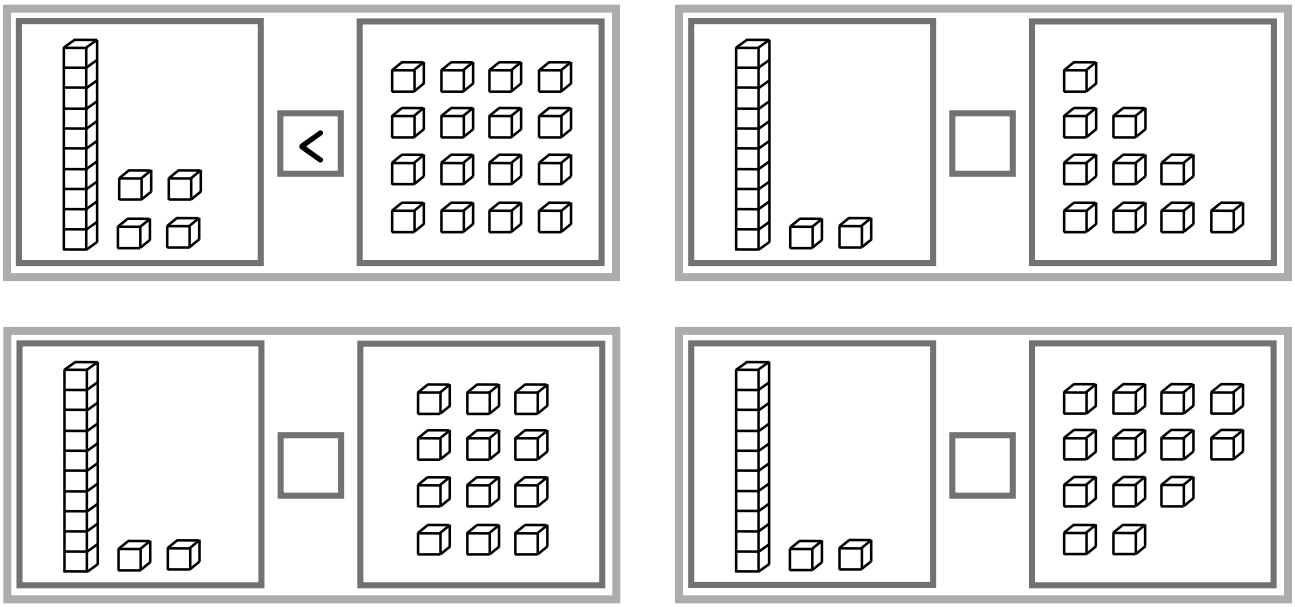


True or false?

$3 + 1 < 4$

$3 = 3$

$5 > 4 + 2$

True or false?

$24 > 14 + 10$

$22 = 12 + 10$

$20 + 6 > 24$

Different ways

$10 > \square + 6$

$10 > \square + 6$

$10 > \square + 6$

Class Count

Count in 2s Challenge part 1

1	2	3	4	5		7	8	9	10
11		13	14	15	16	17	18	19	20

Count in 2s Challenge part 2

1	2	3	4	5		7	8	9	
11		13	14	15	16	17		19	20

Count in 2s Challenge part 3

1		3	4	5		7	8	9	
11		13		15	16	17		19	20

Class Count

Count in 5s

Challenge part 1

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24		26	27	28	29	30
31	32	33	34	35	36	37	38	39	
41	42	43	44	45	46	47	48	49	50

Count in 5s

Challenge part 2

1	2	3	4	5	6	7	8	9	
11	12	13	14	15	16	17	18	19	20
21	22	23	24		26	27	28	29	30
31	32	33	34	35	36	37	38	39	
41	42	43	44		46	47	48	49	50

Class Count

Count in 5s

Challenge part 3

1	2	3	4		6	7	8	9	
11	12	13	14	15	16	17	18	19	
21	22	23	24		26	27	28	29	30
31	32	33	34	35	36	37	38	39	
41	42	43	44		46	47	48	49	50

Spot the mistakes

Count up and down in 1s

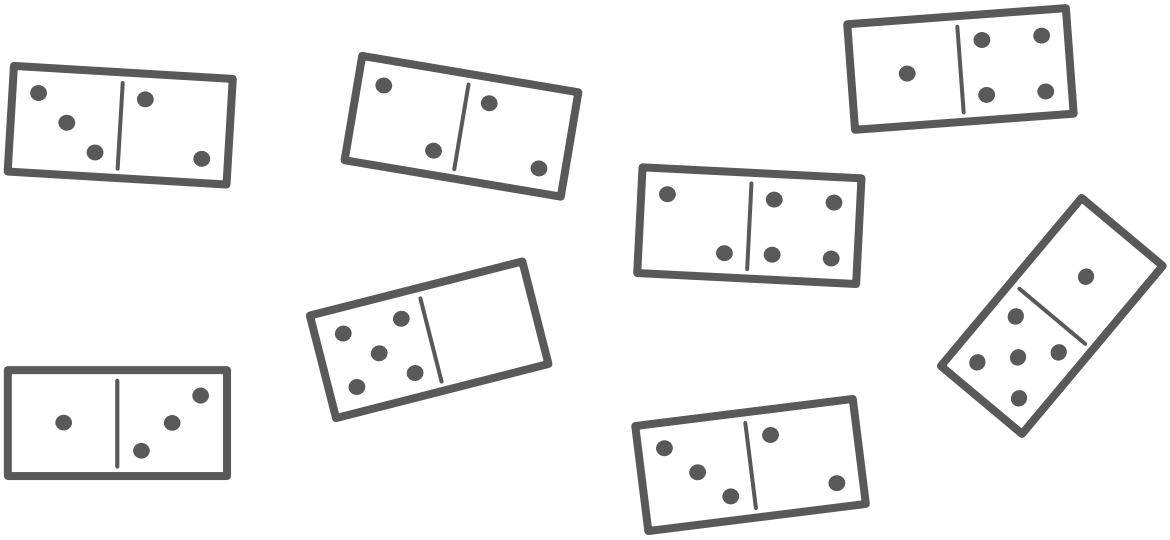
13, 14, 16, 17

27, 28, 29, 210

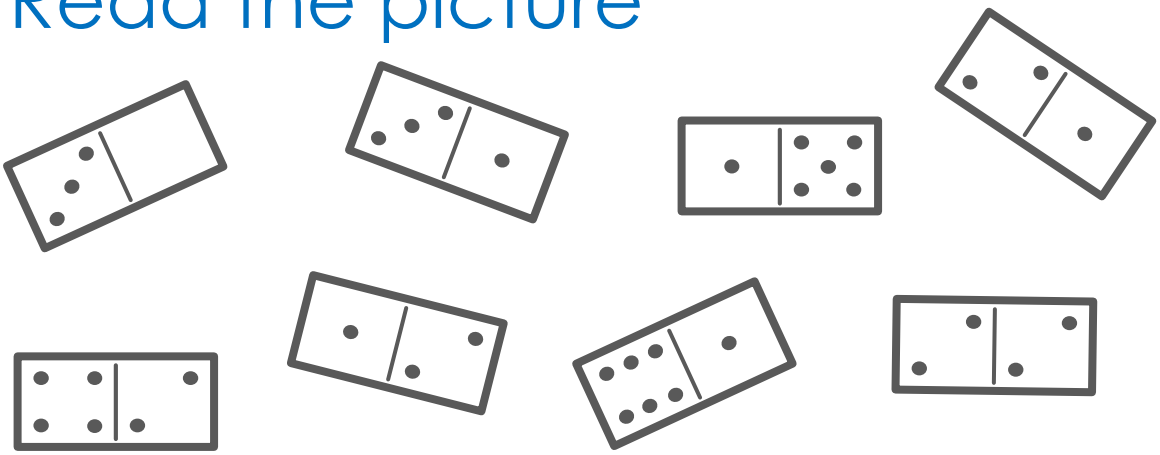
32, 31, 30, 20

Read the picture

Circle the dominoes with 5 dots:



Read the picture

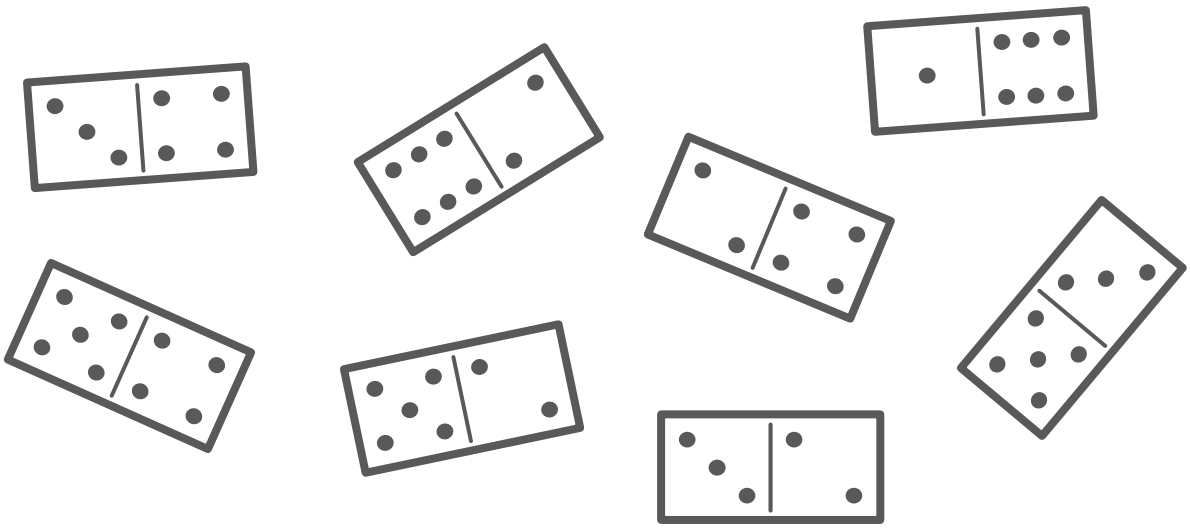


[ ] dominoes with [4] dots

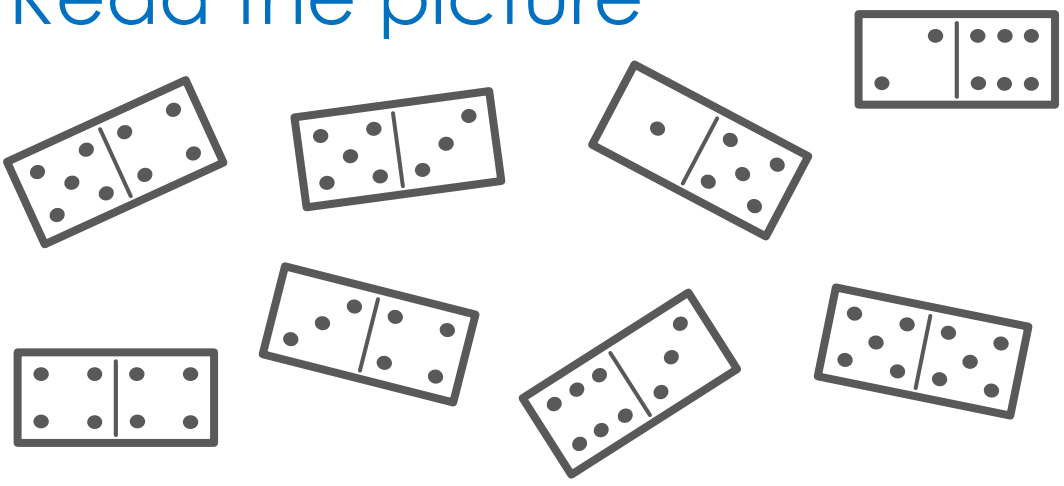
[3] dominoes with [ ] dots

Read the picture

Circle the dominoes with 7 dots:



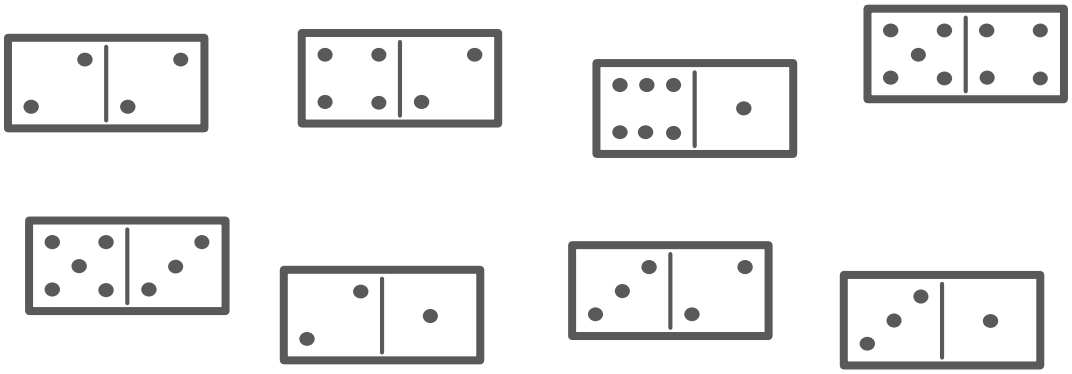
Read the picture



[ ] dominoes with [8] dots

[2] dominoes with [ ] dots

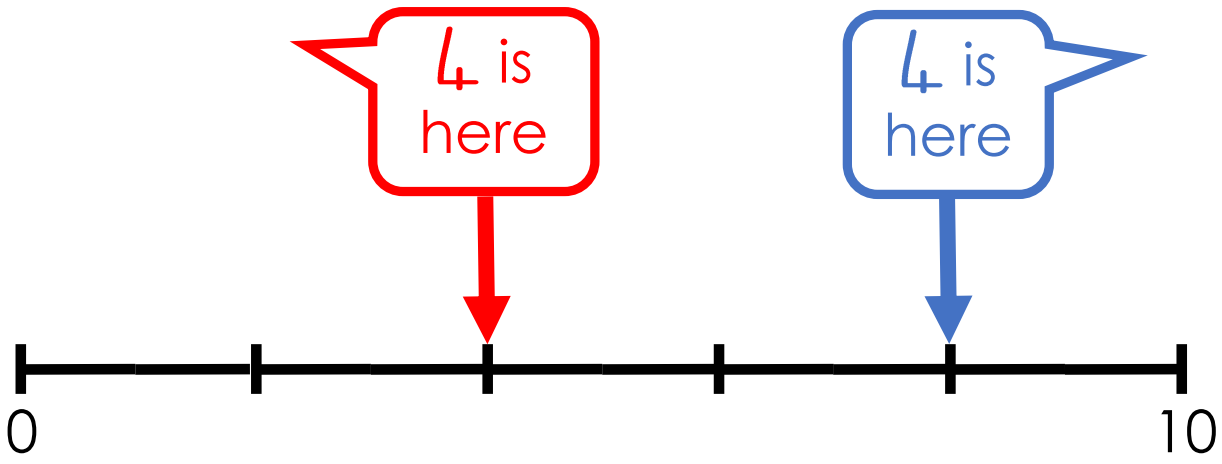
Read the picture



[ ] dominoes with more than [7] dots

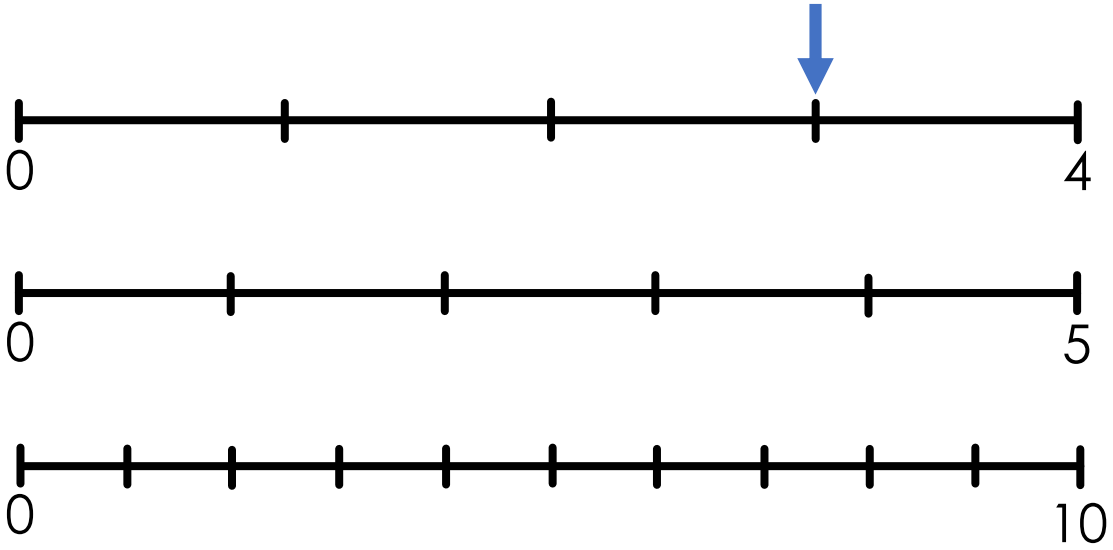
[3] dominoes with less than [ ] dots

Which answer?



Number lines

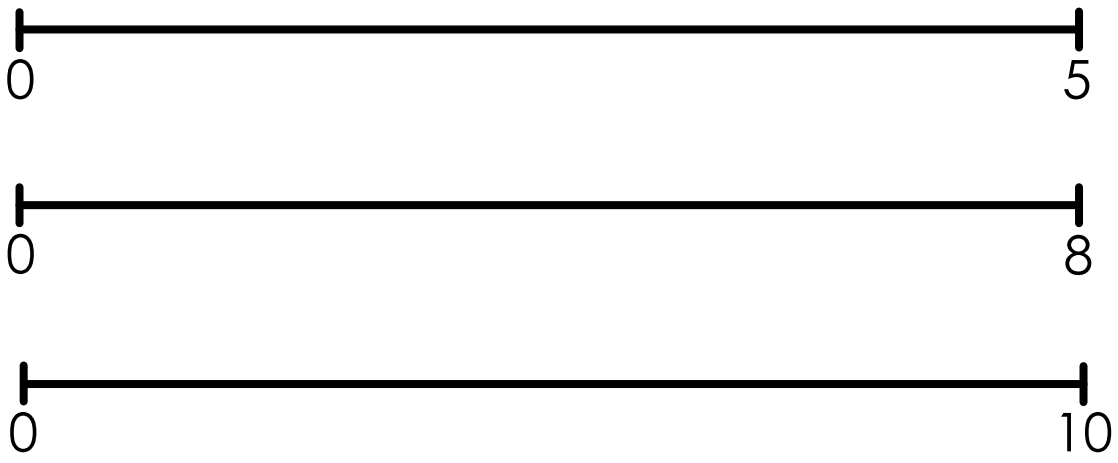
Show **3** on each number line.



What do you see?

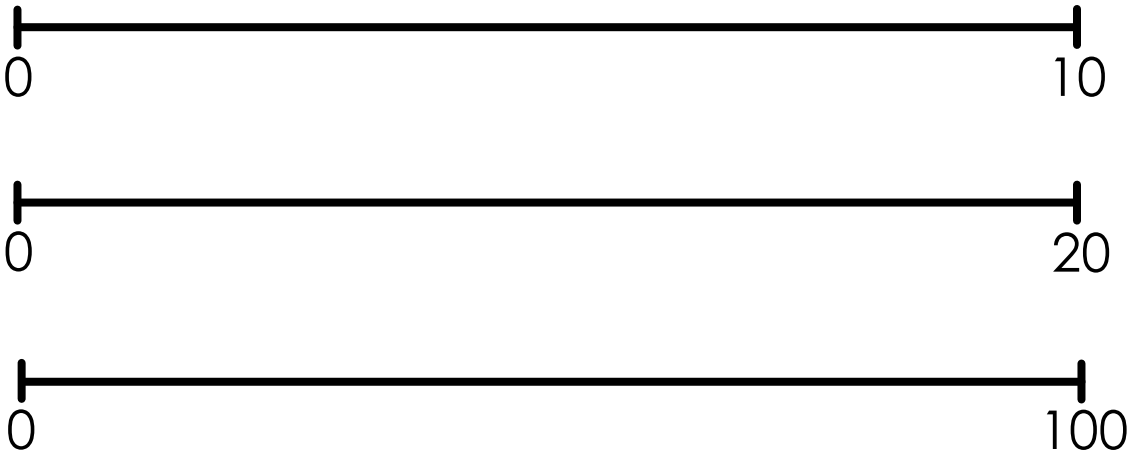
Number lines

Show **4** on each number line.



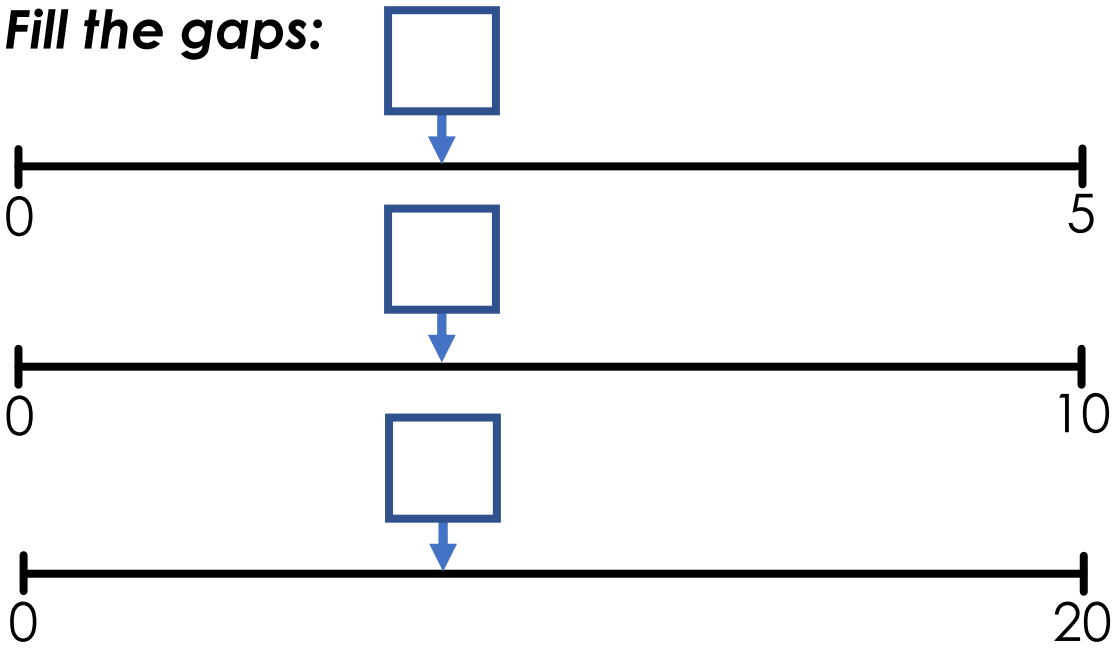
Number lines

Show **8** on each number line.



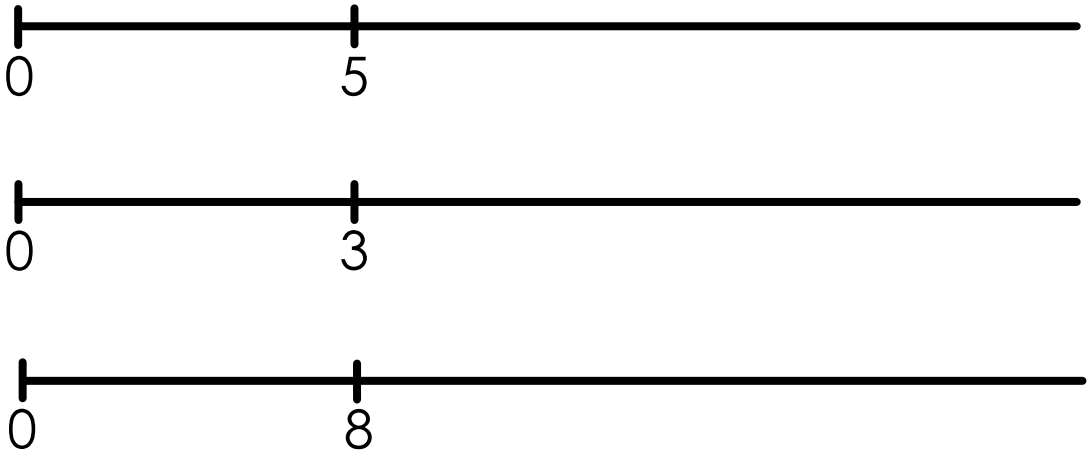
Number lines

Fill the gaps:

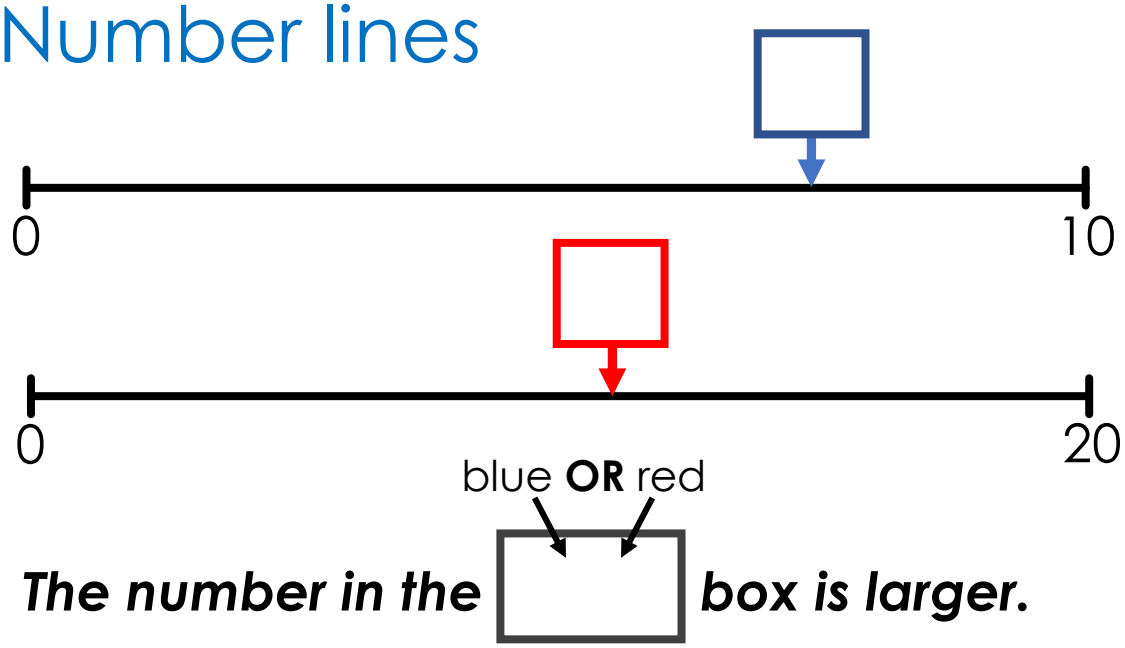


Number lines

Show **10** on each number line.



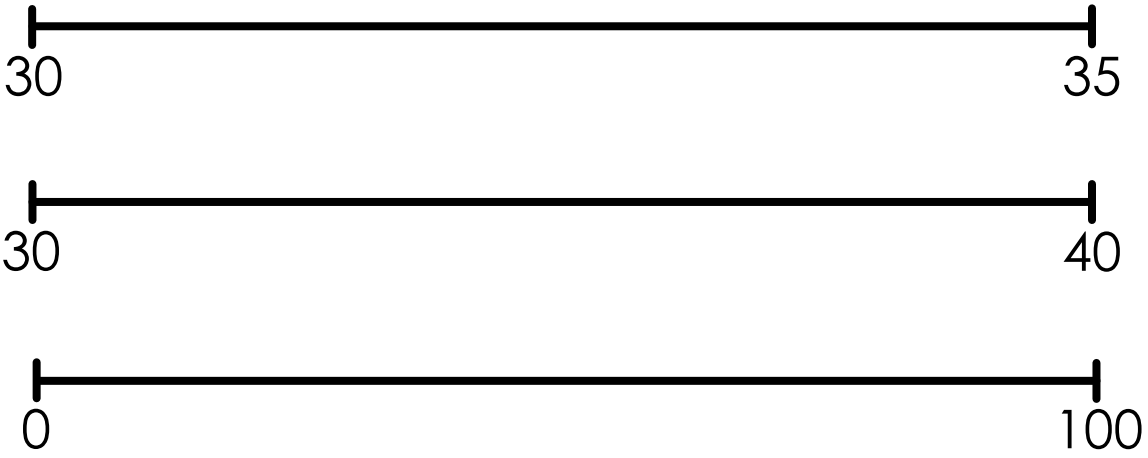
Number lines



The number in the box is larger.

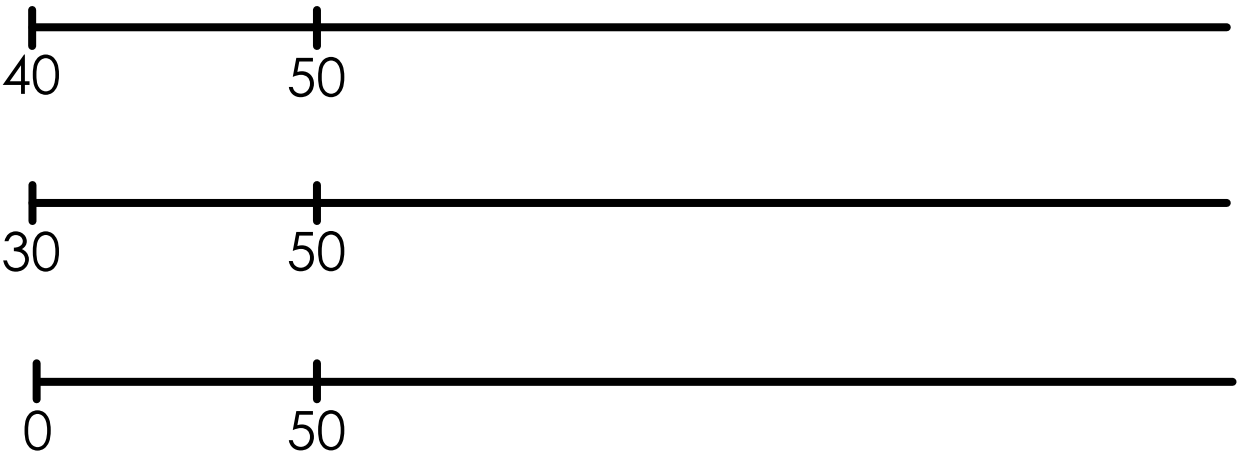
Number lines

Show **34** on each number line.



Number lines

Show **80** on each number line.



Missing numbers

Fill in the red boxes.

1		3			6	7			
					16				
		23							
31				35			38		
						47			50

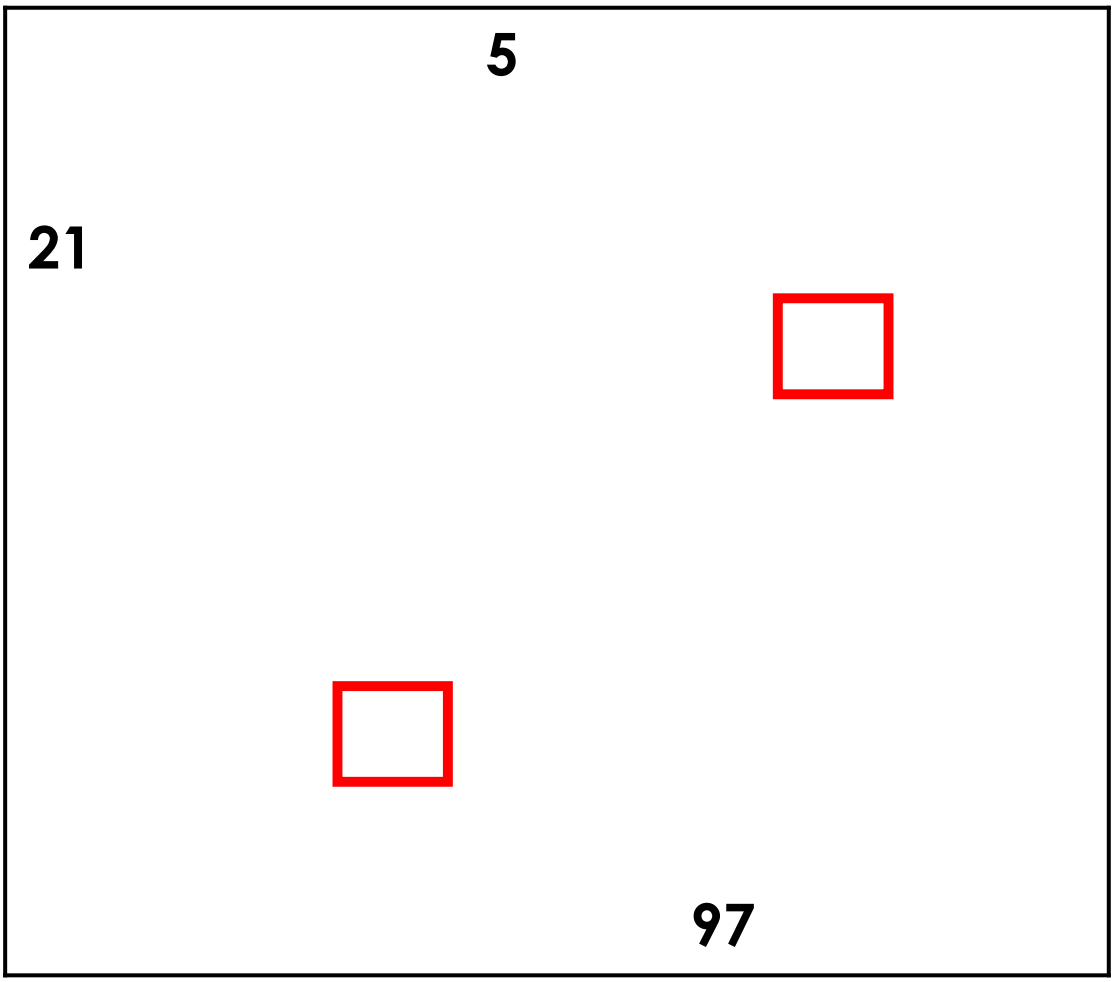
Missing numbers

Fill in the red boxes.

				5					
11	12						18	19	
				35	36				
					46				50

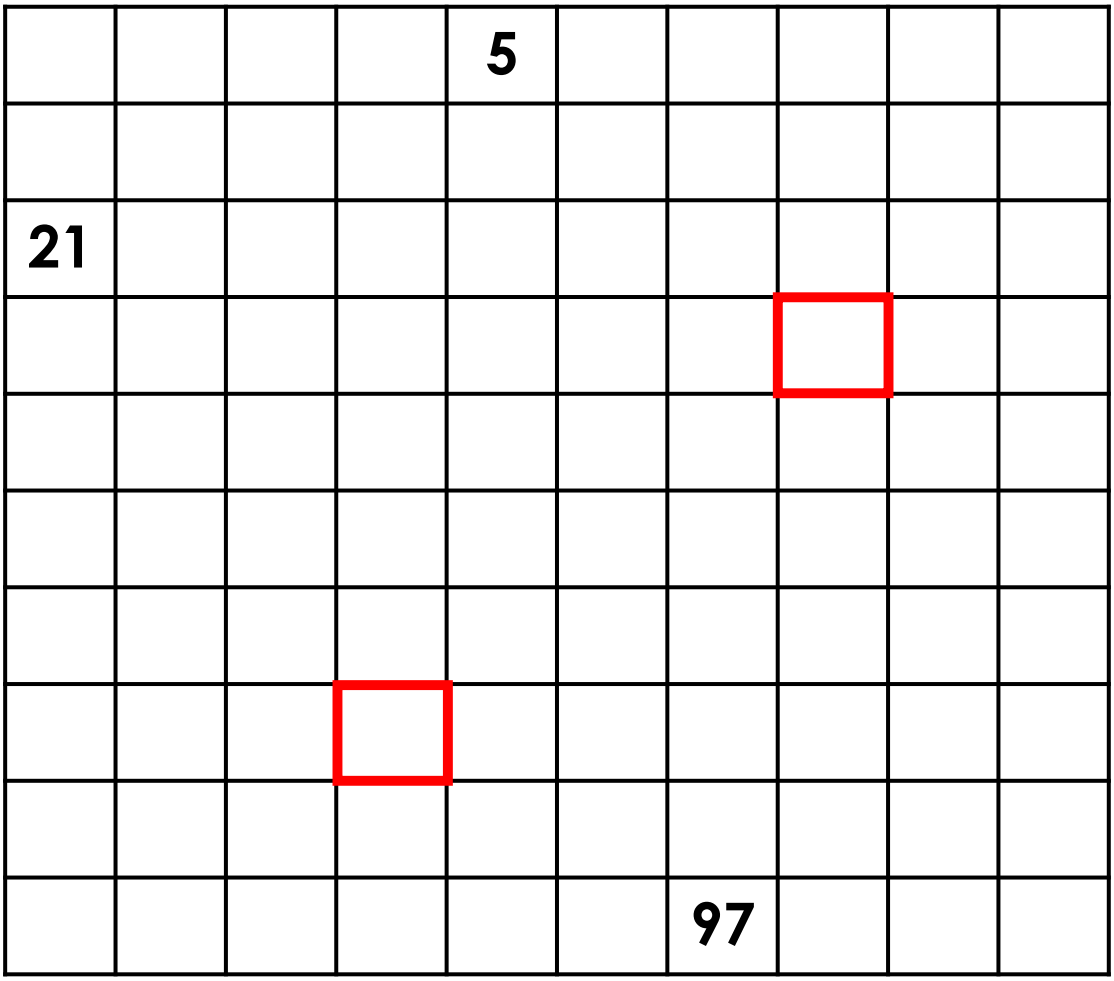
Missing numbers

What numbers could be in the red boxes?



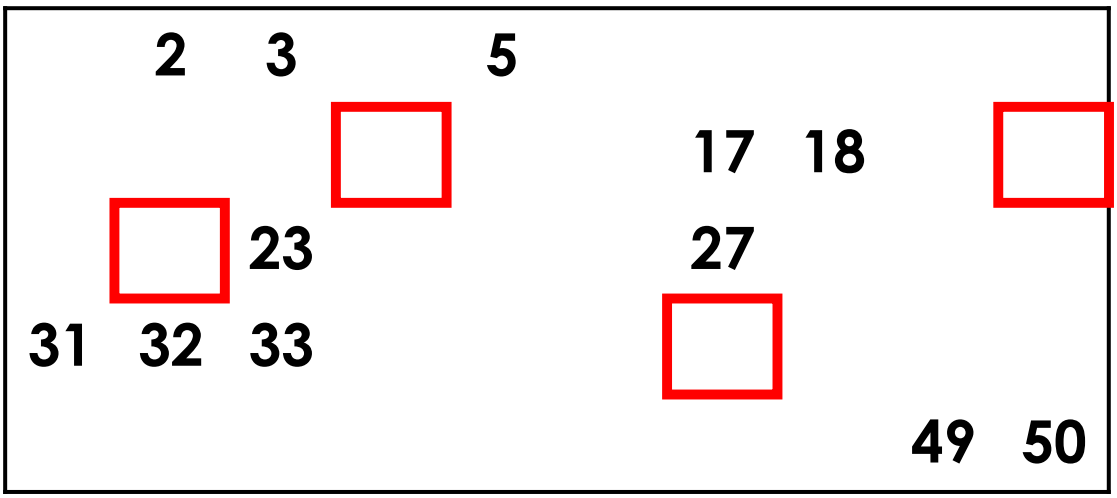
Missing numbers

What numbers are in the red boxes?

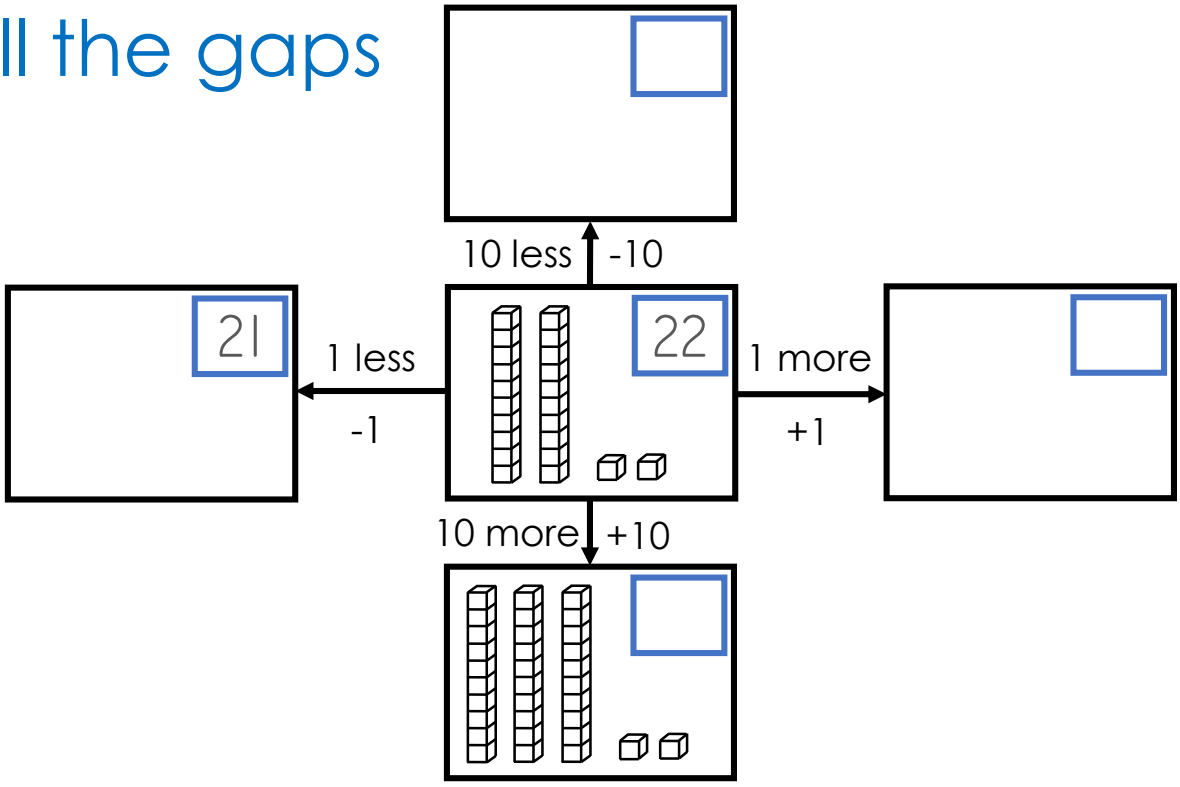


Missing numbers

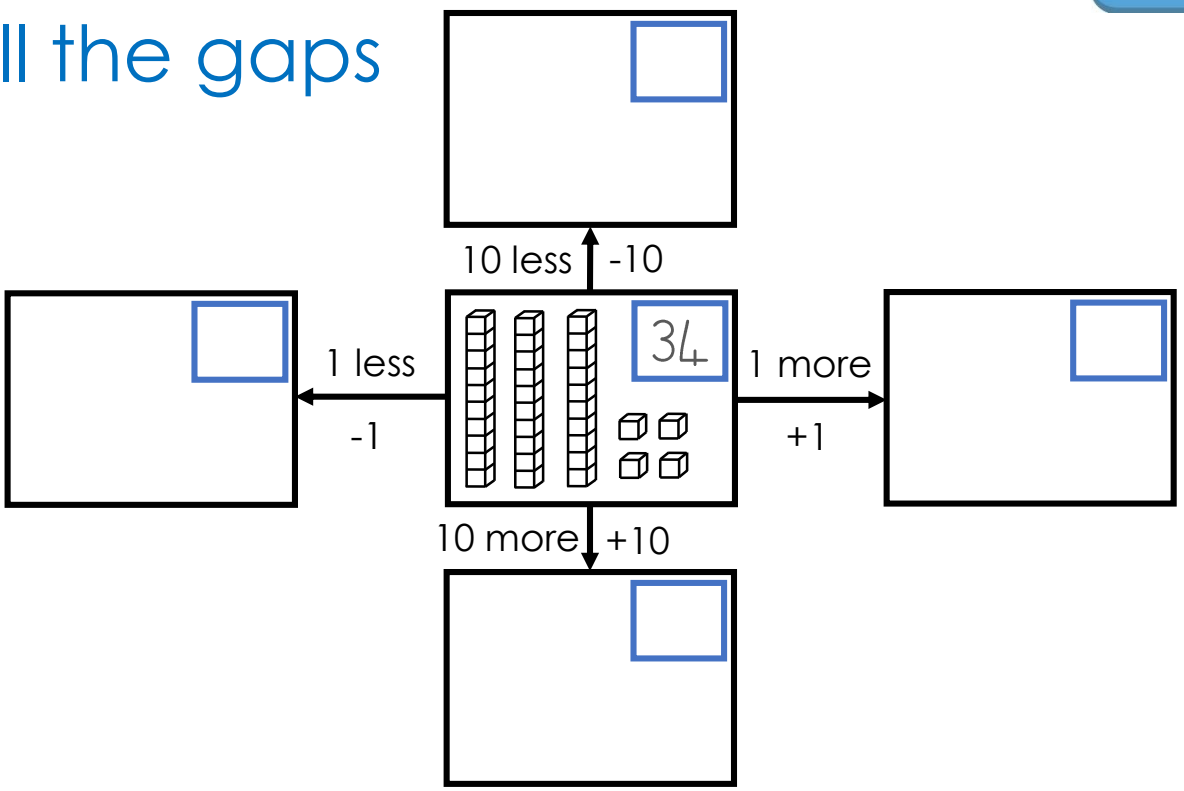
Fill in the red boxes.



Fill the gaps



Fill the gaps



True or false?

✓ ✗

74 + 1 = 84

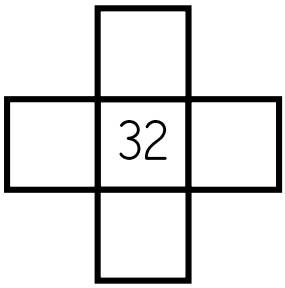
26 - 1 = 25

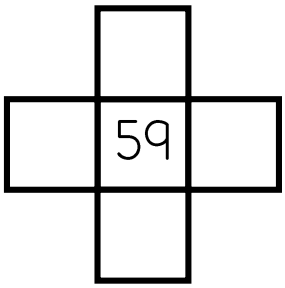
43 + 10 = 53

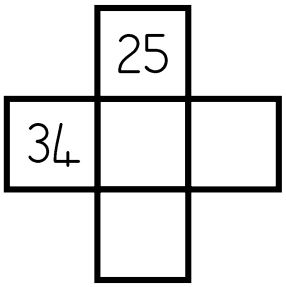
26 - 10 = 36

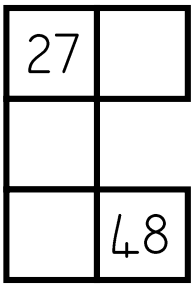
Fill the gaps

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100





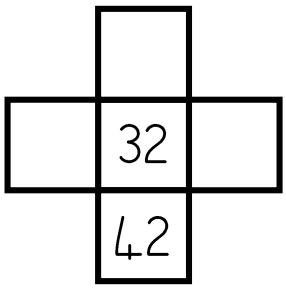


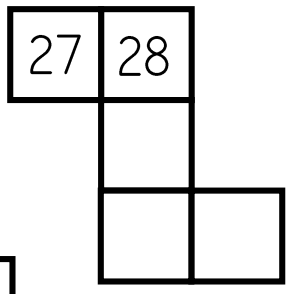


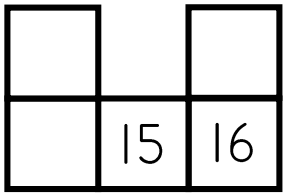
Fill the gaps

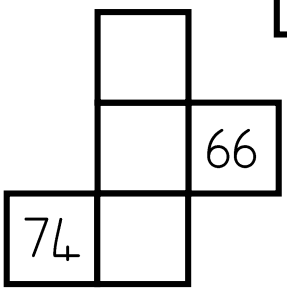
These shapes are from a 100-square.

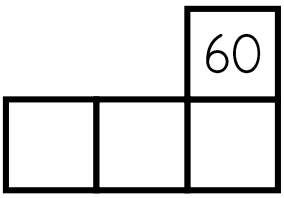
Fill in the missing numbers.





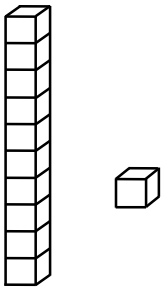






Different ways

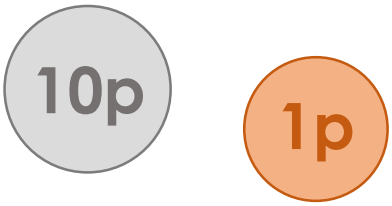
Make 32 using 10s and 1s



Do in different ways

How many ways?

Use **10p** and **1p** coins



Make 24p

How many ways can you do it?

Investigate

Use these digits:

Make a 2-digit number
and a 1-digit number.

Make the difference between the numbers small.

Explain the mistake

5 + 3

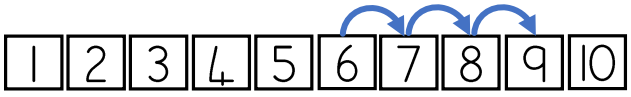
5, 6, **7**

Spot the difference

6 + 3

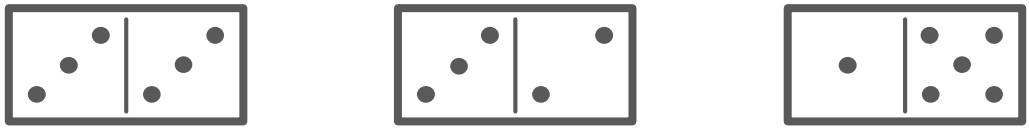
8

6 + 3

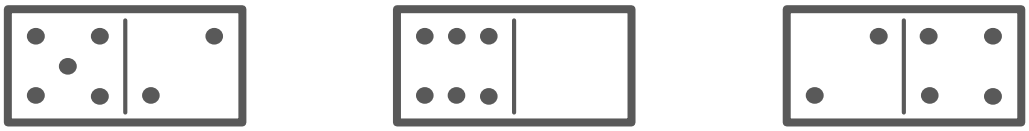


9

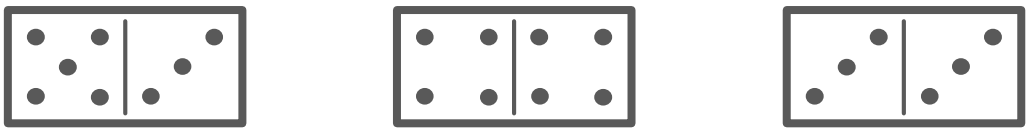
Odd one out



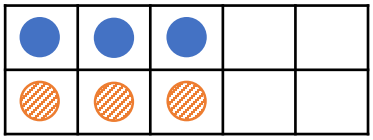
Odd one out



Odd one out

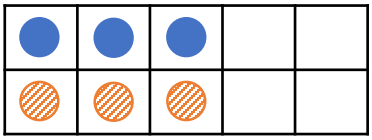


I know… so…



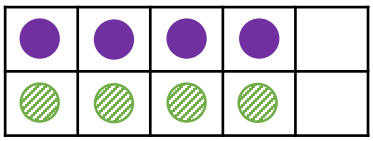
$3 + 3 = 6$

$4 + 3 = \square$



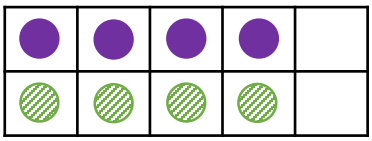
$3 + 3 = 6$

$5 + 3 = \square$



$4 + 4 = 8$

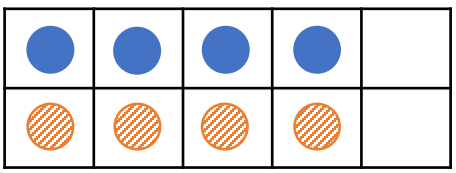
$4 + 5 = \square$



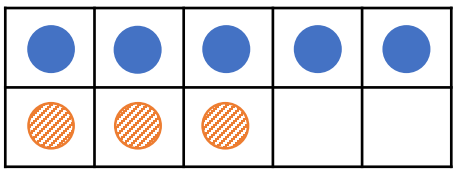
$4 + 4 = 8$

$\square + 4 = 7$

The same… different…

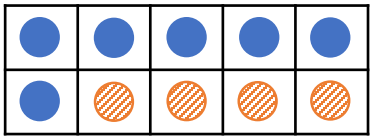


$\square + \square = \square$



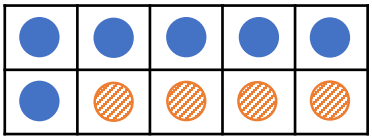
$\square + \square = \square$

I know… so…



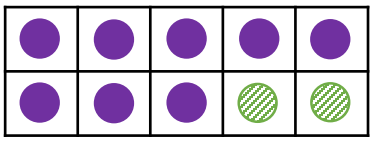
$6 + 4 = 10$

$7 + 4 = \square$



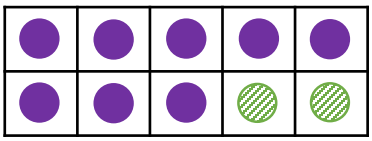
$6 + 4 = 10$

$6 + 3 = \square$



$8 + 2 = 10$

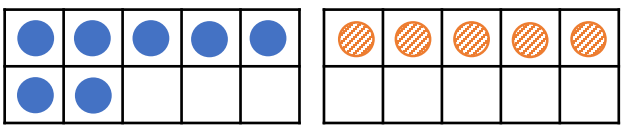
$8 + 4 = \square$



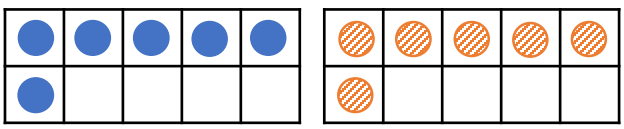
$8 + 2 = 10$

$8 + \square = \square$

The same… different…

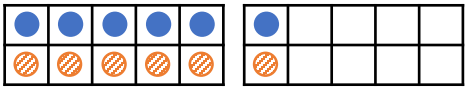


$\square + \square = \square$



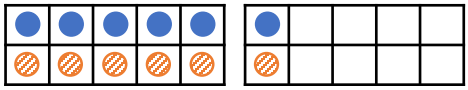
$\square + \square = \square$

I know… so…



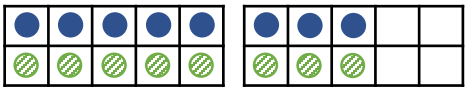
$6 + 6 = 12$

$7 + 6 = \square$



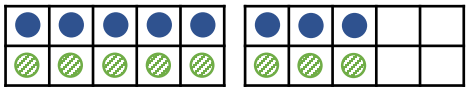
$6 + 6 = 12$

$6 + 5 = \square$



$8 + 8 = 16$

$8 + 6 = \square$

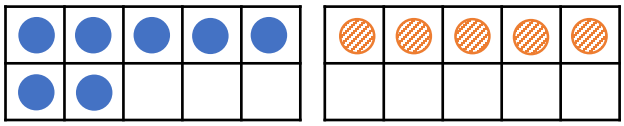


$8 + 8 = 16$

$\square + 8 = 17$

Different ways

$7 + 5 = \square$



7 + 5 is the same as:

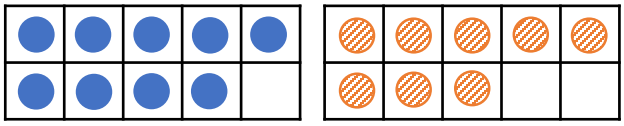
$5 + 5 + \square$

$7 + 3 + \square$

$6 + \square$

Different ways

9 + 8 = ☐



9 + 8 is the same as:

10 + 10 take away ☐

Double ☐ add 1

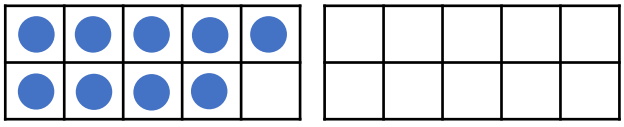
Double ☐ take away 1

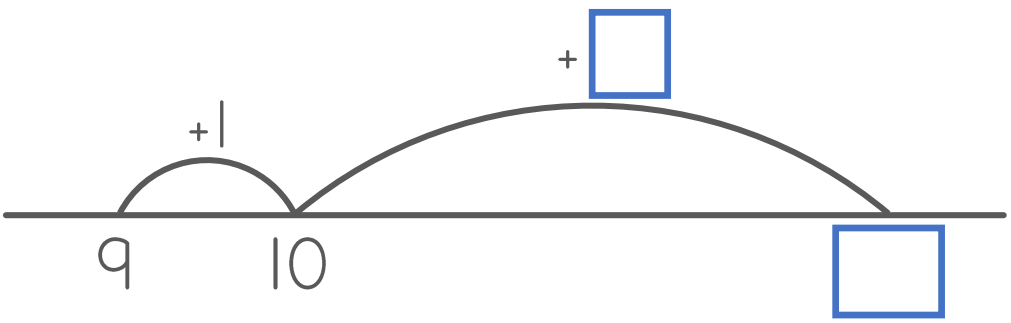
Other: _____

_____

Finish the picture

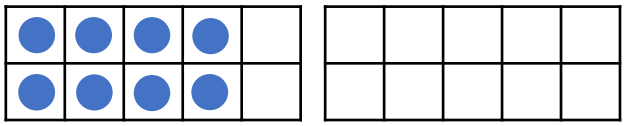
9 + 5 = ☐

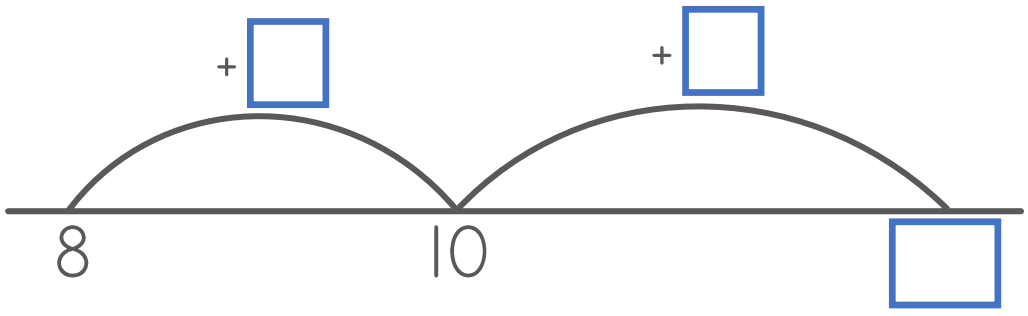




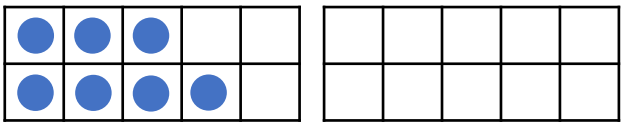
Finish the pictures

8 + 5 = ☐

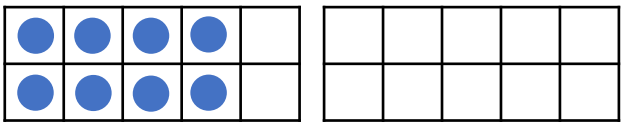




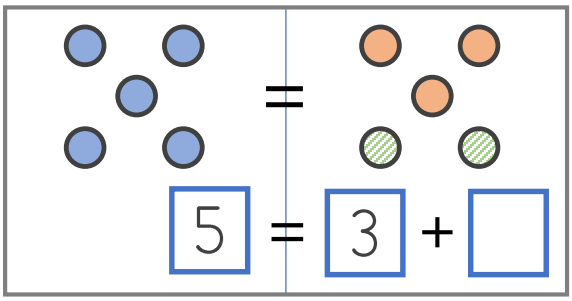
7 + 5 = ☐

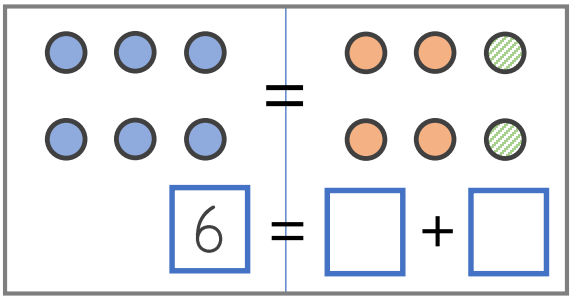


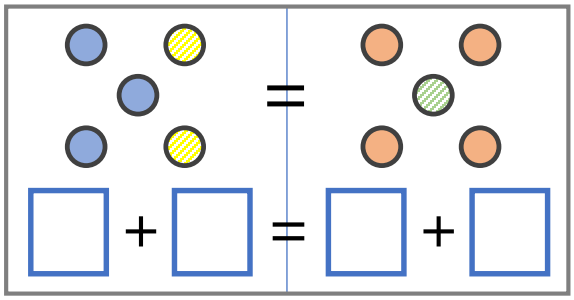
8 + 6 = ☐

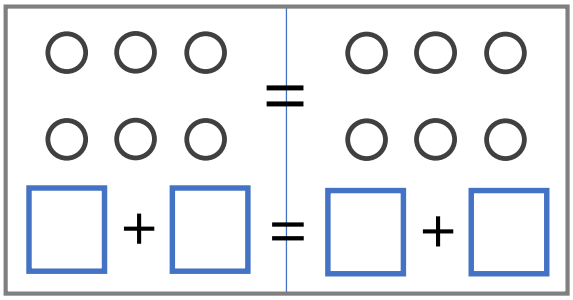


Finish the pictures

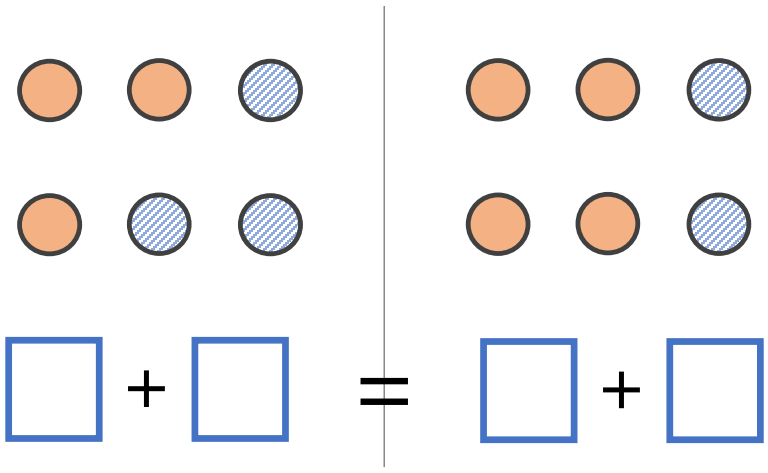








The same… different…



True or false?

$4 = 3 + 1$

$4 = 4$

$2 + 2 = 4 + 1$

True or false?

$5 + 3 = 8 + 1$

$8 = 5 + 3$

$5 + 3 = 3 + 5$

Which answer?

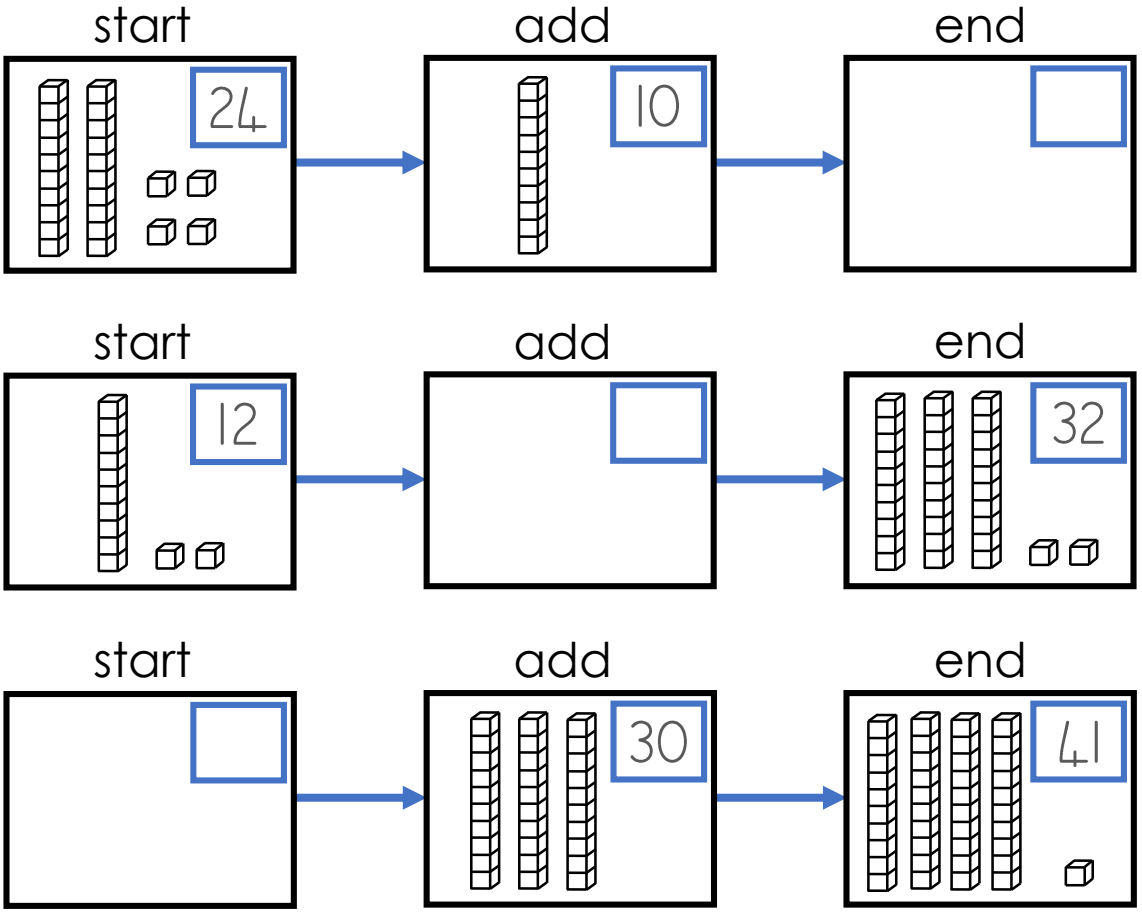
$3 + 2 = \square + 1$

5

6

4

Fill the gaps



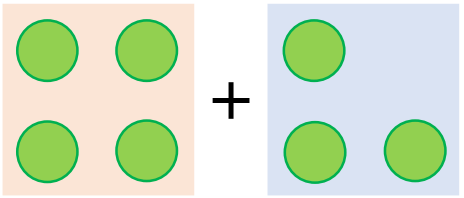
Which answer?

88 + ☐ = 100

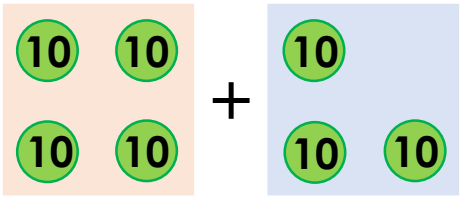
12

22

The same… different…



□ + □ = □



□ + □ = □

Which answer?

6 + 3 = 9 so **60 + 30 =** □

90

630

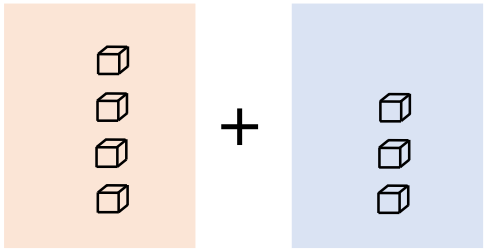
Odd one out

6 + 4

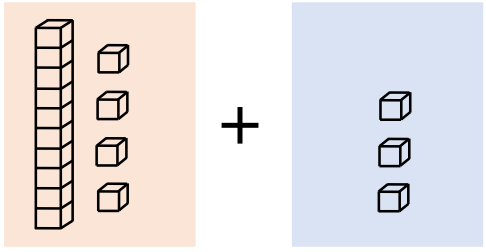
16 + 4

60 + 40

The same… different…

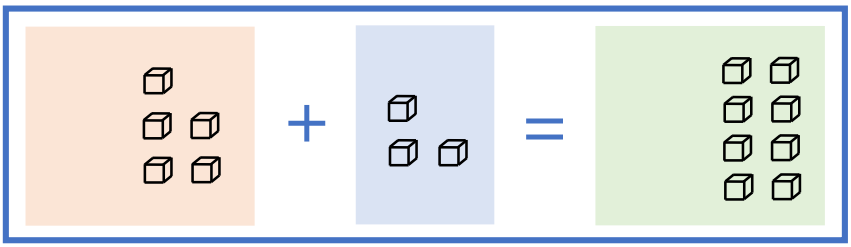


□ + □ = □

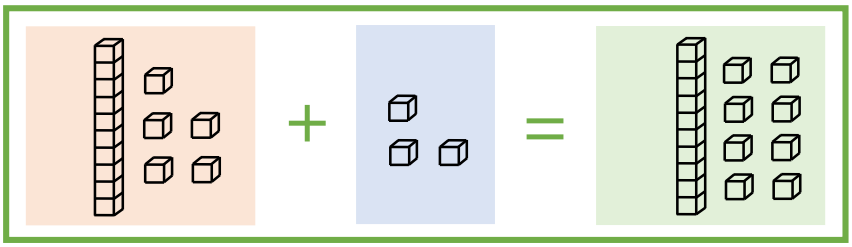


□ + □ = □

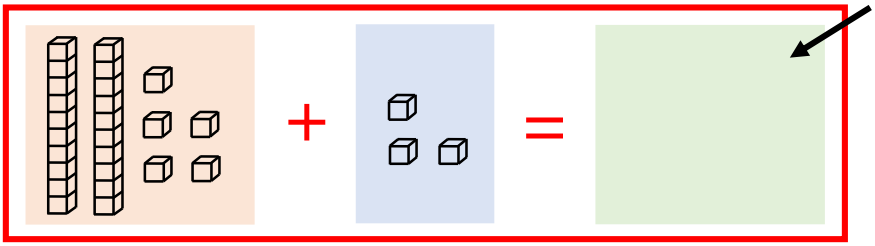
I know… so…



5 + 3 = □

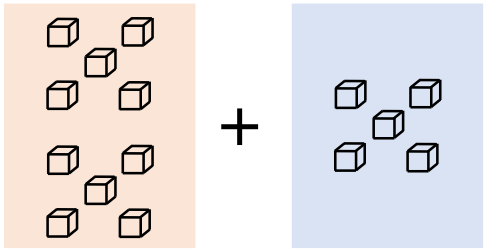


15 + 3 = □

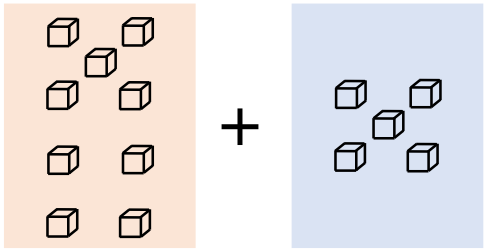


25 + 3 = □

Spot the difference

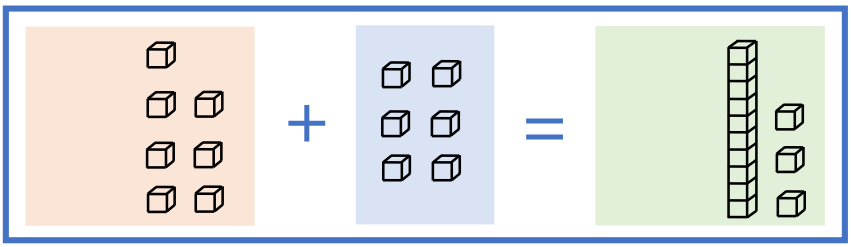


□ + □ = □

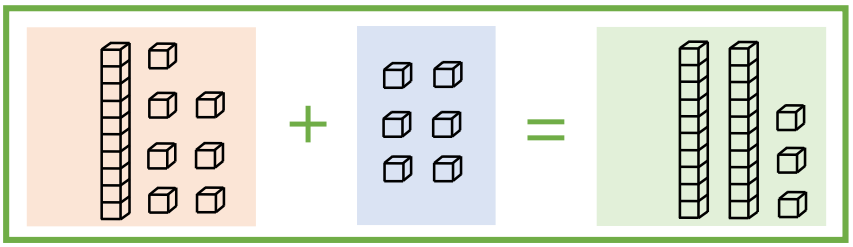


□ + □ = □

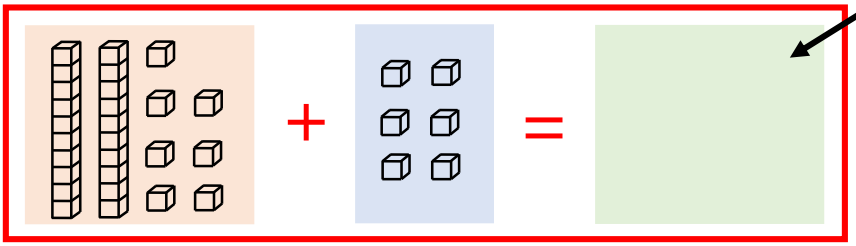
I know… so…



7 + 6 = □



17 + 6 = □



27 + 6 = □

Which answer?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75					

$75 + \square = 100$

35

25

Missing number

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64						

$64 + \square = 100$

I know… so…

36 + 20 = 56

36 + 23 = ☐

36 + 20 = 56

36 + ☐ = 55

43 + 30 = 73

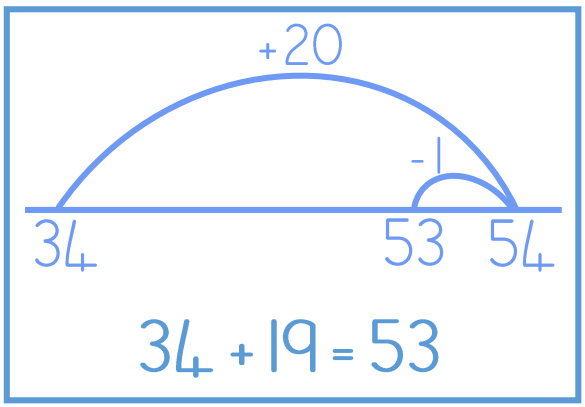
43 + 29 = ☐

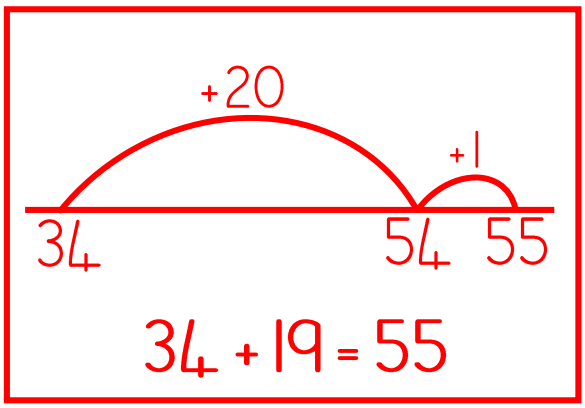
43 + 30 = 73

43 + ☐ = 75

Which answer? ✓ ✗

34 + 19





Which is harder?

Circle the <u>harder</u> question in each pair.

16 + 7 **OR** 16 + 12

20 + 12 **OR** 19 + 12

70 + 14 **OR** 70 + 41

Change the order

Which numbers do you add first?

9 + 6 + 4 = ☐

Add ☐ + ☐ first

7 + 6 + 3 = ☐

Add ☐ + ☐ first

4 + 8 + 2 + 6 = ☐

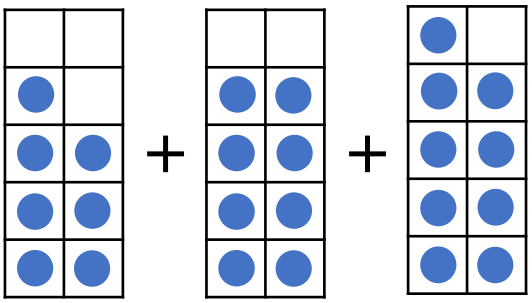
Add ☐ + ☐ first

8 + 5 + 3 = ☐

Add ☐ + ☐ first

Different ways

$7 + 8 + 9 = \square$



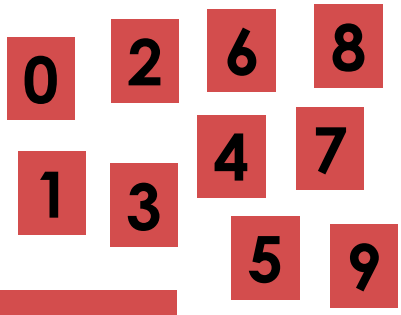
Add $\square$ + $\square$ then add $\square$

30 take away $\square$

3 lots of $\square$

Digit cards game

You need digit cards 0 to 9

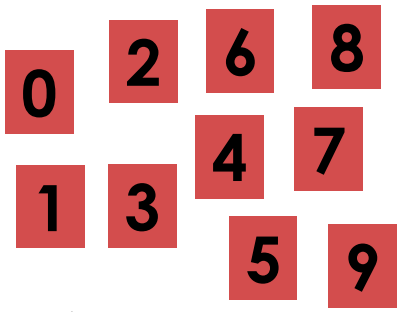


$\square + \square = \square\square$

The answer is in the 5 times table.

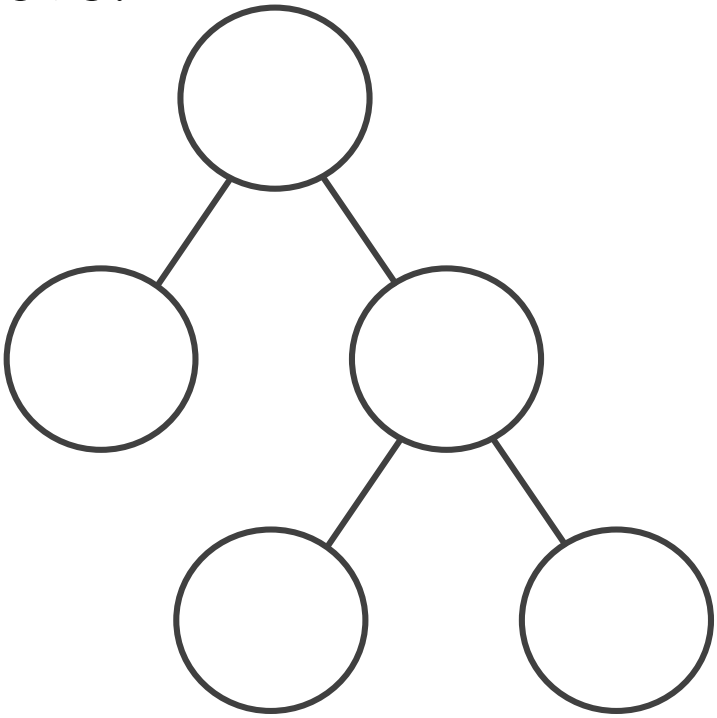
Do in different ways.

Digit cards game



You need digit cards 0 to 9

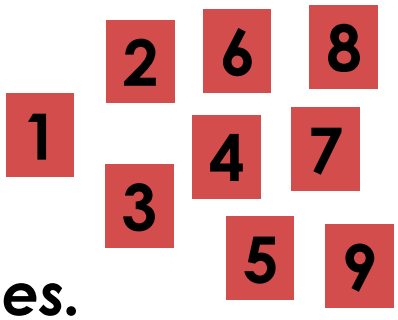
The two numbers in the circles below add to make the number in the circle above.



Do in different ways.

What is the smallest number that can go in the top circle?

Digit cards game



You need digit cards 1 to 9

Use each digit once.

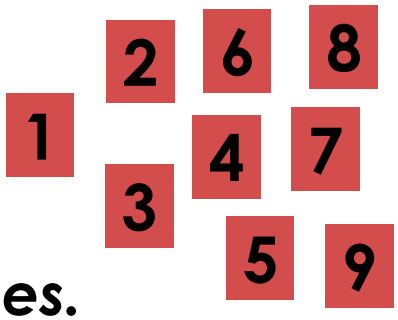
Complete the number sentences.

□ = □ + □

□ + □ = □

□ + □ > □

Digit cards game



You need digit cards 1 to 9

Use each digit once.

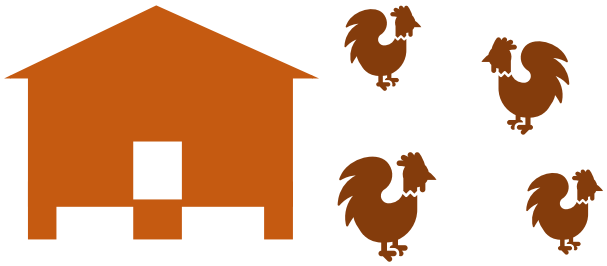
Complete the number sentences.

$\square + \square < \square$

$\square = \square + \square$

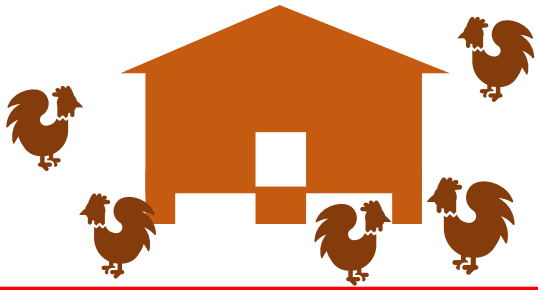
$\square < \square + \square$

How many hiding?



6 hens in total

☐ hens in the hut



8 hens in total

☐ hens in the hut

5 hens in total

☐ hens in the hut

4 hens in total

☐ hens in the hut

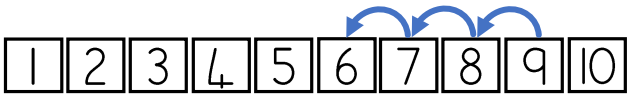
Explain the mistake

7 - 4

7, 6, 5, **4**

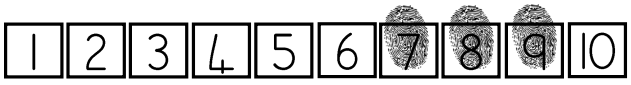
Spot the difference

9 - 3



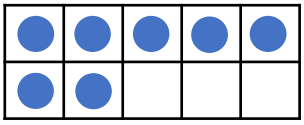
6

9 - 3



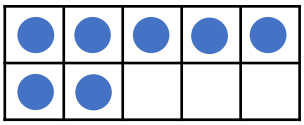
7

Spot the pattern

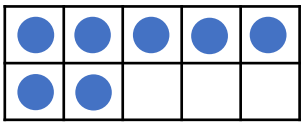


7 - 5 = ☐

What do you notice?

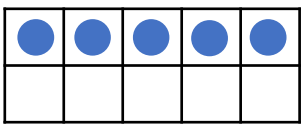


7 - 4 = ☐



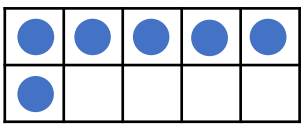
7 - 3 = ☐

Spot the pattern

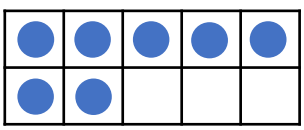


5 - 2 = ☐

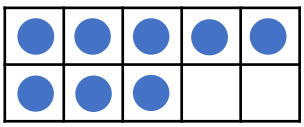
What do you notice?



6 - 3 = ☐

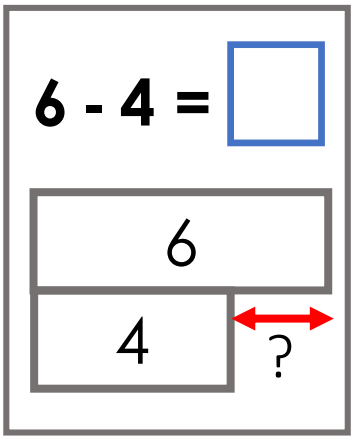


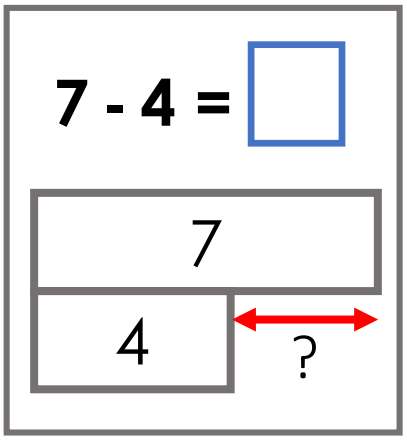
7 - 4 = ☐

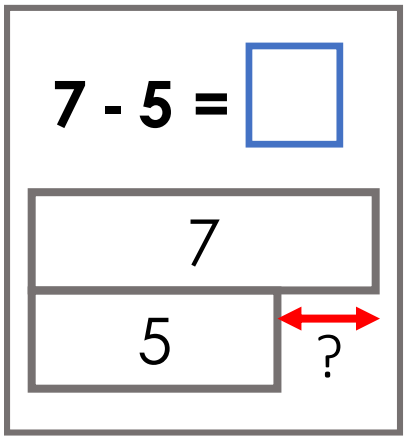


8 - ☐ = ☐

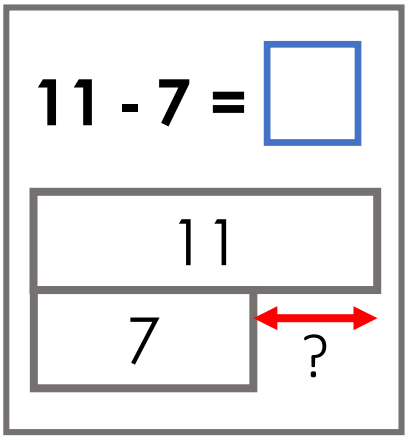
Odd one out

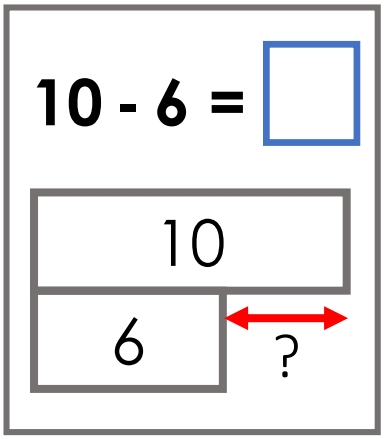


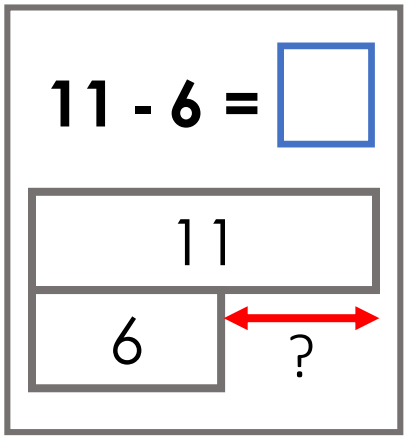




Odd one out



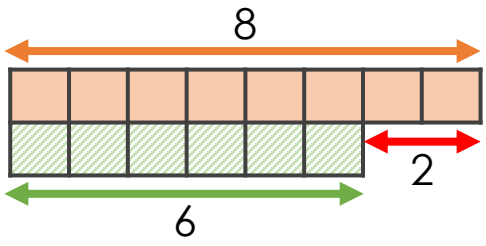




I know… so…

8 - 6 = 2

8 - 5 = ☐

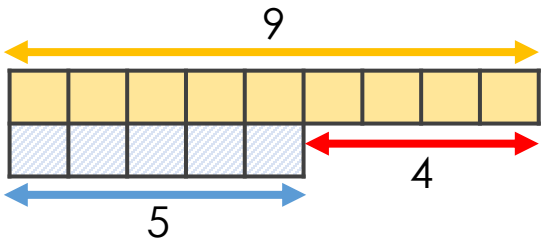


8 - 6 = 2

9 - 6 = ☐

9 - 5 = 4

9 - 4 = ☐



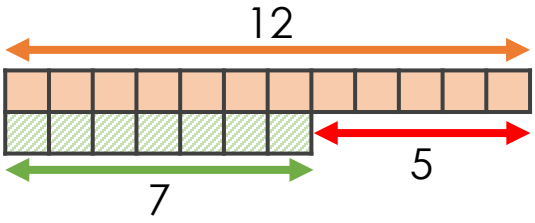
9 - 5 = 4

☐ - 5 = 3

I know… so…

12 - 7 = 5

12 - 8 = ☐

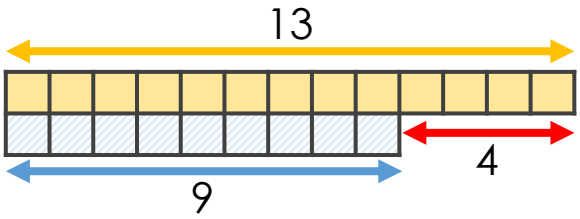


12 - 7 = 5

☐ - 7 = 6

13 - 9 = 4

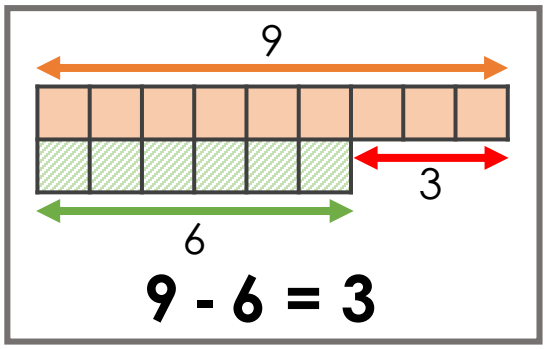
13 - 8 = ☐

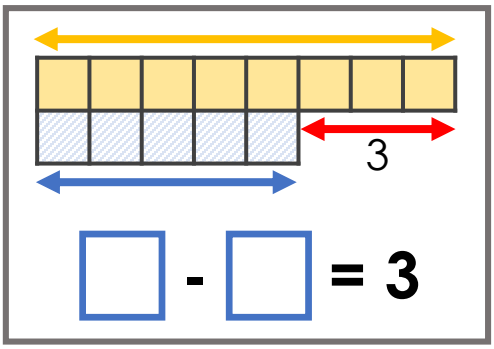


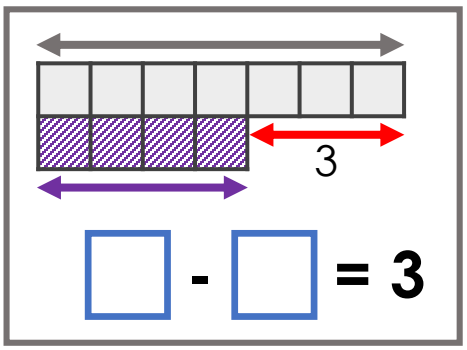
13 - 9 = 4

14 - 9 = ☐

Make 3





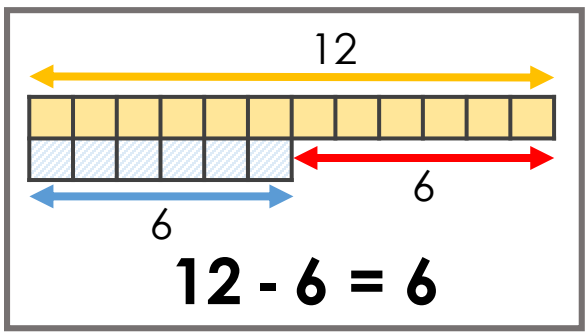


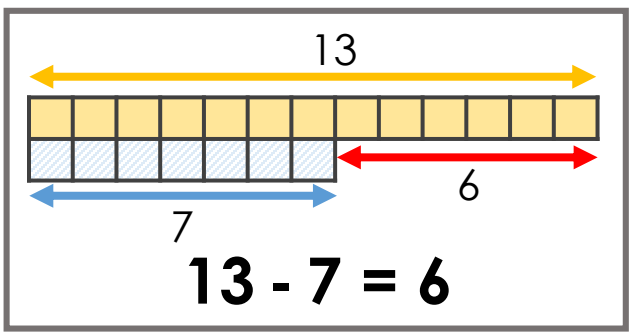
Other ways:

□ - □ = 3

□ - □ = 3

Make 6





11 - □ = 6

10 - □ = 6

14 - □ = 6

15 - □ = 6

Fill the gaps

13 − 8 = 5 *Spot the pattern*

1□ − 7 = 5

1□ − 6 = 5

1□ − 5 = 5

Fill the gaps

14 − 8 = 6 *Spot the pattern*

14 − □ = 7

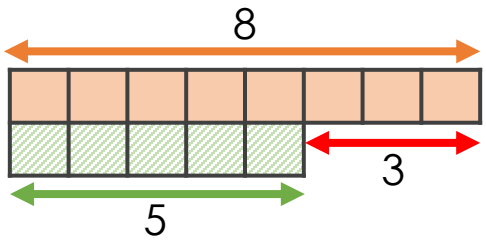
14 − □ = 8

14 − □ = 9

True or false? ✓ ✗

5 + 3 = 8 ✓

8 - 5 = 3



5 - 8 = 3

8 - 3 = 5

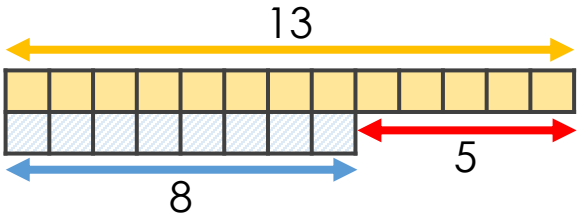
8 = 5 + 3

3 + 5 = 8

True or false? ✓ ✗

13 - 5 = 8 ✓

13 - 8 = 5



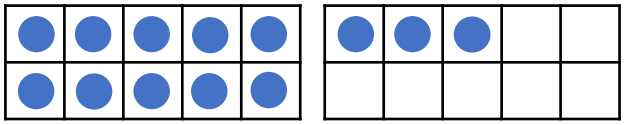
13 = 5 + 8

5 - 13 = 8

13 - 5 = 8

5 = 8 + 13

Which way?



13 - 9 = ☐

Take all 9 from the full 10-frame

Take some from both 10-frames

Which answer?

☐ - 2 = 5

7

3

Which answer?

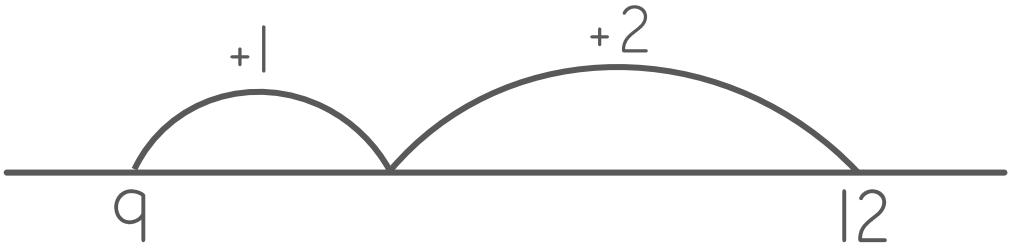
10 = ☐ - 3

7

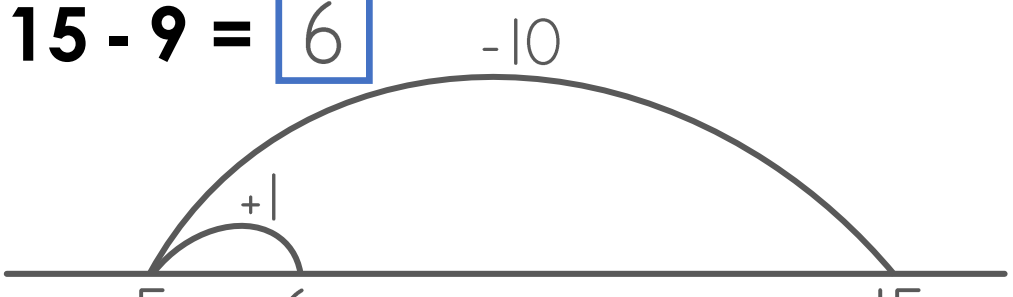
13

True or false?

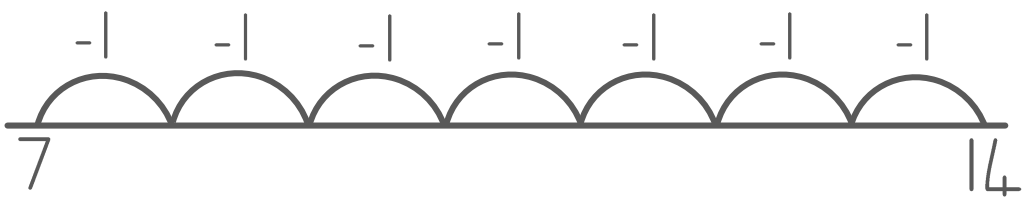
12 - 9 = 3



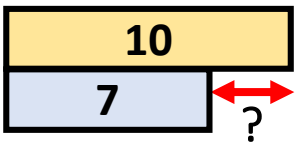
15 - 9 = 6



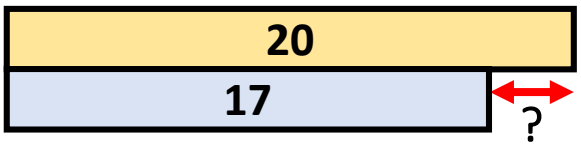
14 - 8 = 7



The same… different…

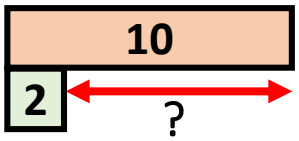


$10 - 7 = \square$

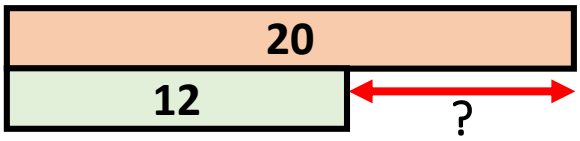


$20 - 17 = \square$

The same… different…

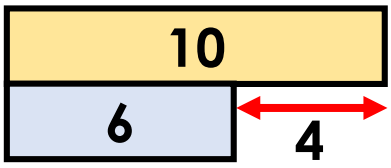


$10 - 2 = \square$



$20 - 12 = \square$

I know… so…



10 - 6 = 4

$20 - 6 = \square$

$20 - 16 = \square$

$100 - 60 = \square$

$10 - 4 = \square$

$20 - 4 = \square$

$20 - 14 = \square$

Which answer?

73 - 30 = ☐

73, 63, **53**.
It's 53.

63, 53, **43**.
It's 43.

I know… so…

64 - 21 = 43

64 - 20 = ☐

64 - 19 = ☐

56 - 31 = 25

56 - 30 = ☐

56 - 29 = ☐

Easiest? Hardest?

32 - 29

32 - 21

32 - 19

Different ways

26 - 18 = ☐

Count on from ☐ to ☐

Take away 20 then add ☐

Do 26 take away 16 then take away ☐

Different ways

25 - 19 = ☐

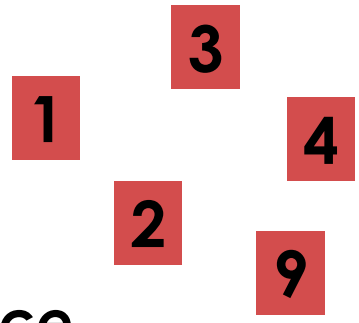
Count on from ☐ to ☐

Take away ☐ then add ☐

Do 25 take away 15 then take away ☐

Digit cards game

You need these digit cards:

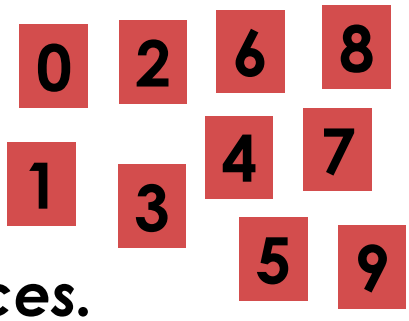


Use each digit once.

Complete the number sentence.

Challenge: do in different ways.

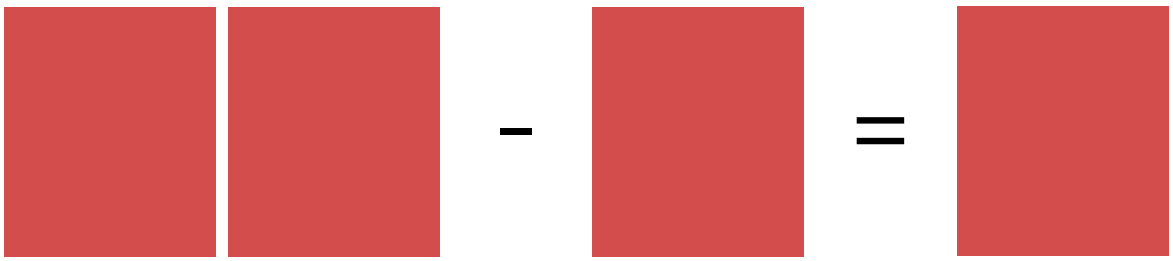
Digit cards game



You need digit cards 0 to 9

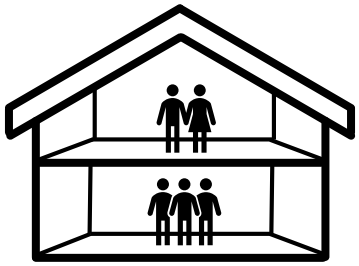
Use seven of the cards.

Complete the number sentences.



Challenge: use the **0** *card.*

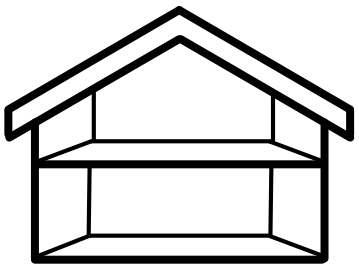
Finish the pictures



[ ] people upstairs

[ ] people downstairs

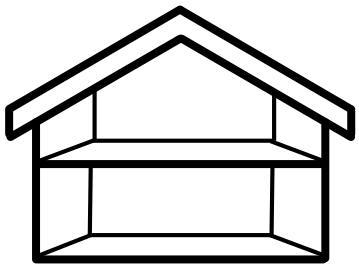
[5] people in total



[2] people upstairs

[4] people downstairs

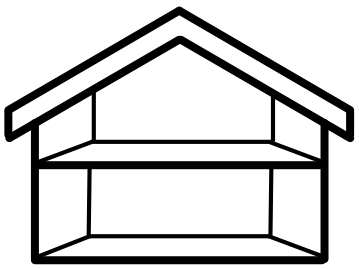
[ ] people in total



[2] people upstairs

[ ] people downstairs

[4] people in total



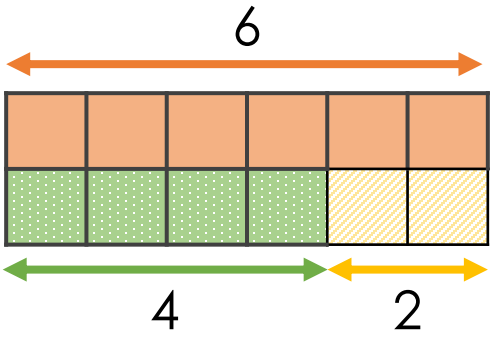
[ ] people upstairs

[5] people downstairs

[5] people in total

True or false? ✓ ✗

$4 + 2 = 6$ ✓



$6 - 2 = 4$

$4 = 2 + 6$

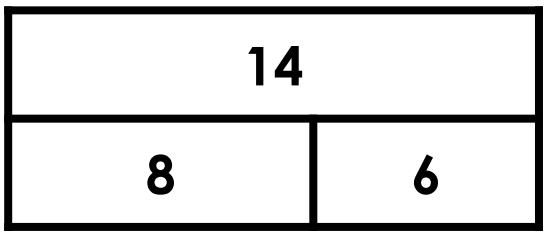
$4 - 6 = 2$

$6 - 2 = 4$

$6 = 4 + 2$

True or false? ✓ ✗

$8 + 6 = 14$ ✓



$8 - 6 = 14$

$14 = 8 + 6$

$8 = 14 - 6$

$14 - 6 = 8$

$8 = 6 + 14$

Which number sentence?

2 boys and 3 girls. How many children?

Which number sentence:

$2 + \square = 3$ ⟵ **OR** ⟶ $2 + 3 = \square$

6 children. 4 girls. How many boys?

Which number sentence:

$4 + \square = 6$ ⟵ **OR** ⟶ $6 + 4 = \square$

5 children. 1 boy. How many girls?

Which <u>two</u> number sentences:

$5 = 1 + \square$ $\quad 5 + 1 = \square$ $\quad 5 - 1 = \square$

4 girls. 7 children. How many boys?

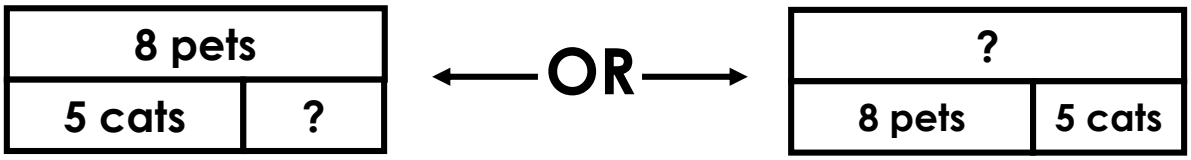
Which <u>two</u> number sentences:

$7 + 4 = \square$ $\quad 7 - 4 = \square$ $\quad 7 = 4 + \square$

Which picture?

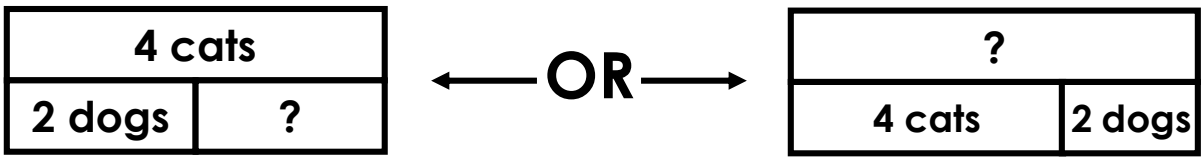
8 pets. 5 cats. How many dogs?

Which bar model:



2 dogs. 4 cats. How many pets?

Which bar model:



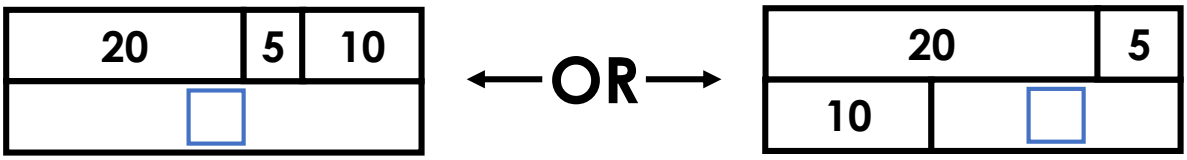
Odd one out

5 + ☐ = 9 **5 + 9 = ☐** **9 - 5 = ☐**

Which picture?

$20 + 5 = 10 + \square$

Which bar model:



Which answer?

$5 + 3 = \square - 2$

10 6 8

Different ways

Fill the gaps. Do in different ways.

$5 + \square = 10 - \square$

How many ways can it be done?

Read the picture

☐ socks

☐ pairs of socks

☐ socks

☐ pairs of socks

Read the picture

☐ children

☐ eyes

3 children

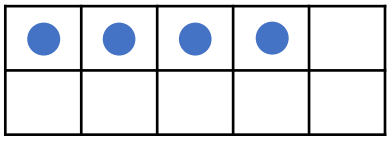
☐ eyes

☐ children

8 eyes

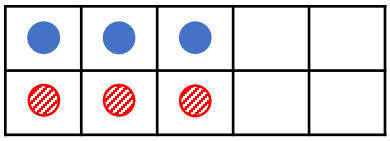
Finish the pictures

This is 4. ***Draw double 4:***



Double 4 = ☐

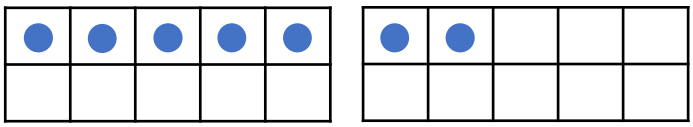
This is 6.



6 is double ☐

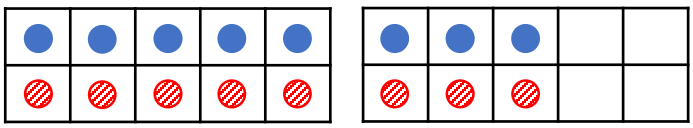
Finish the pictures

This is 7. ***Draw double 7:***



Double 7 = ☐

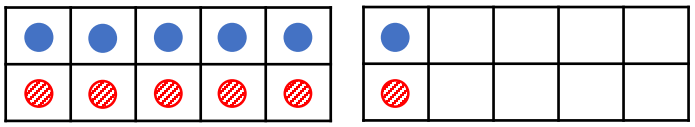
This is 16.



16 is double ☐

Fill the gaps

This is double 6.

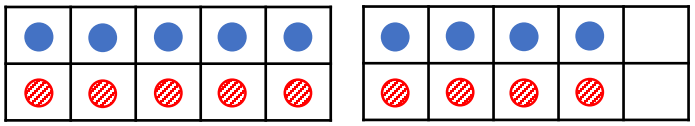


Double 6 = ☐

Double 6 is 10 plus ☐

Double 6 is 20 subtract ☐

This is double 9.

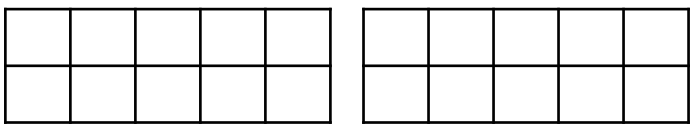


Double 9 = ☐

Double 9 is 10 plus ☐

Double 9 is 20 subtract ☐

This is double ☐

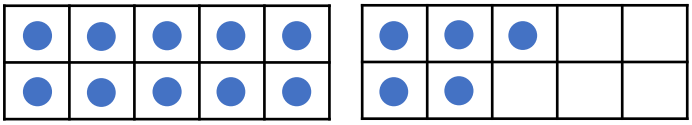


Double ☐ = ☐

Double ☐ is 10 plus ☐

Double ☐ is 20 subtract ☐

Agree or disagree?



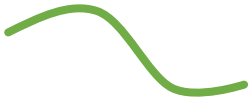
This is double 7

*Can you answer **without** counting the dots?*

Draw **red line:**

*Draw a line **half as long** as the red line:*

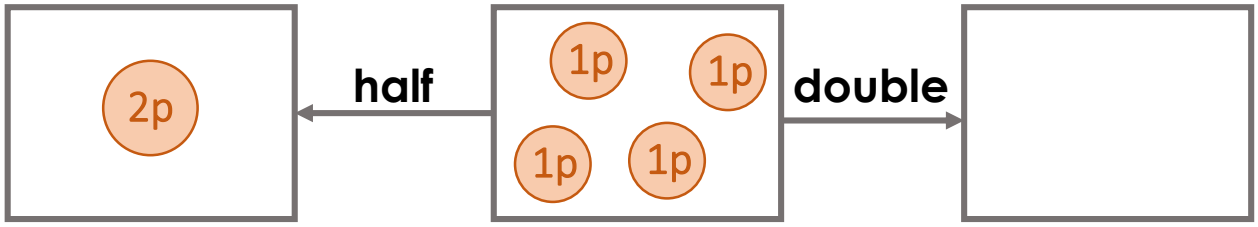
*Draw a line **double the length** of the red line:*

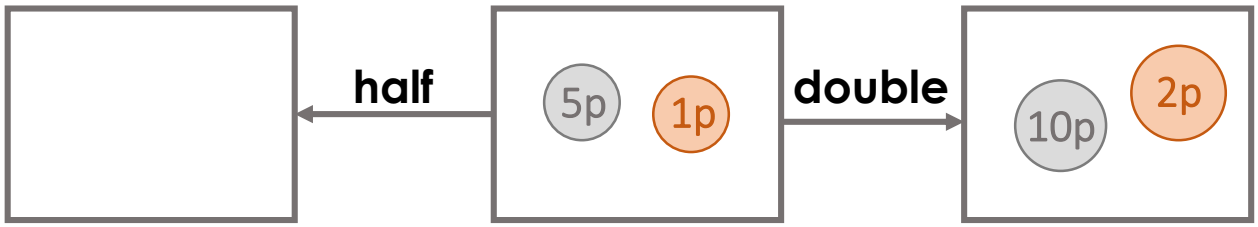
Draw **green line:** 

Draw a straight line half as long as the green line:

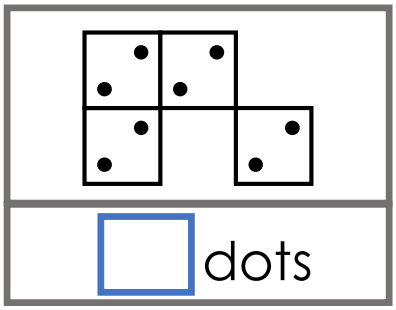
Draw a straight line double the length of the green line:

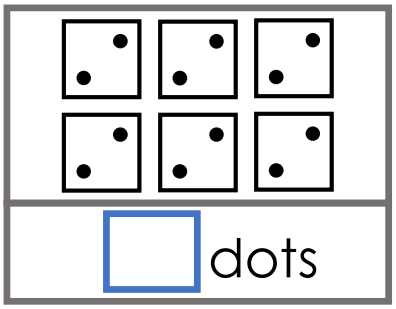
Fill the gaps

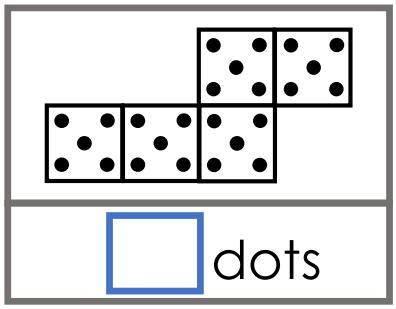


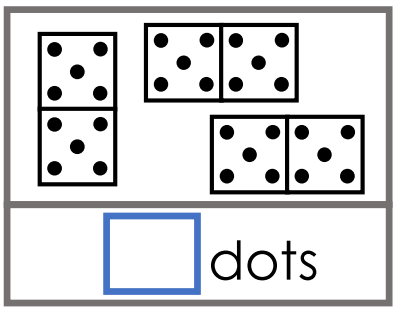


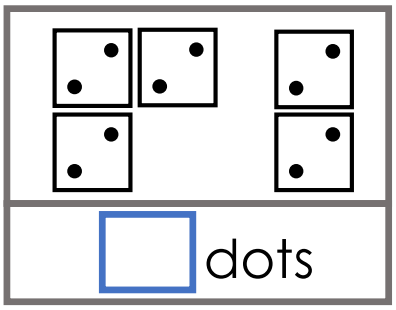
How many dots?

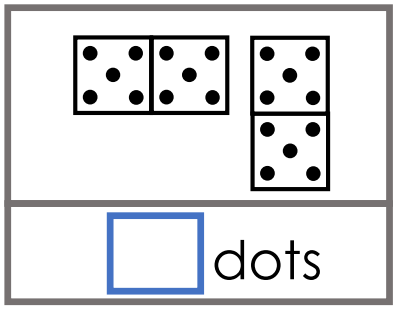




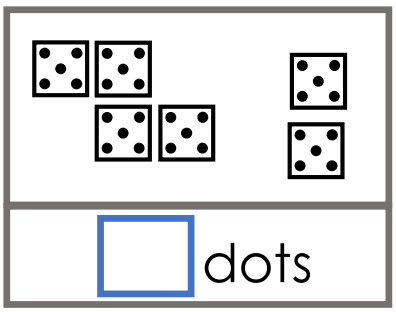


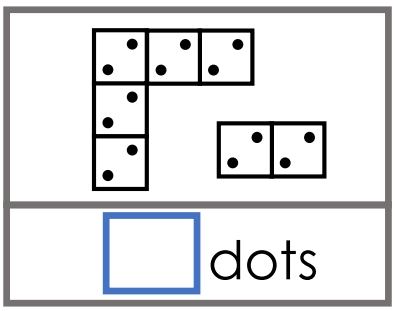


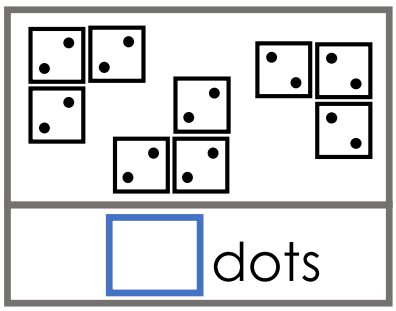


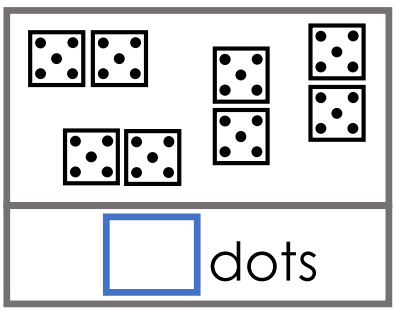


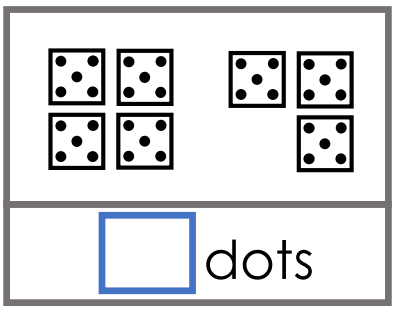
How many dots?

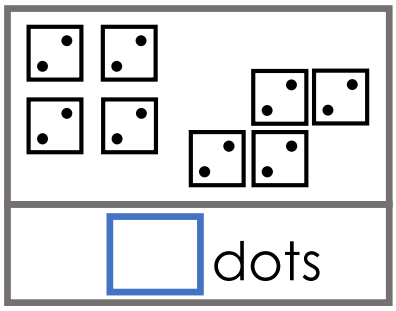




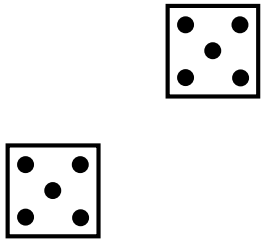


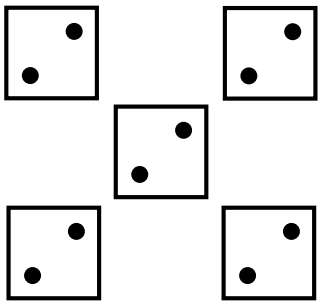




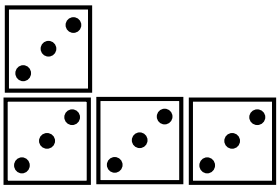


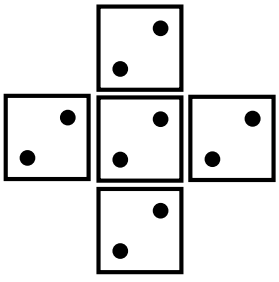
The same… different…

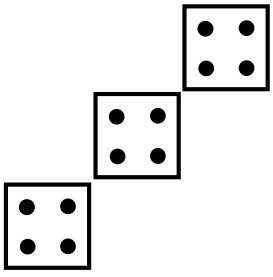




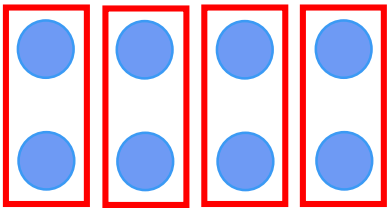
Odd one out

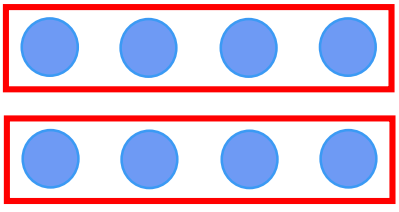






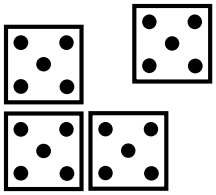
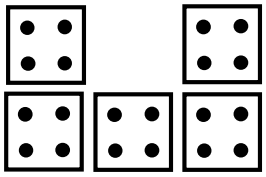
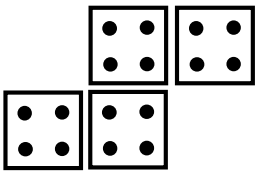
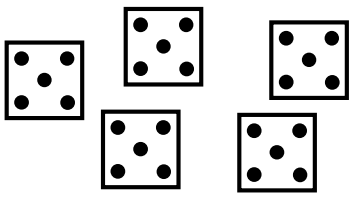
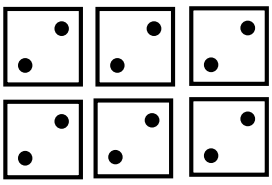
The same… different…





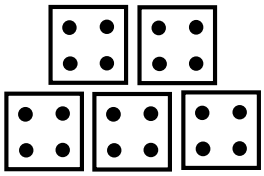
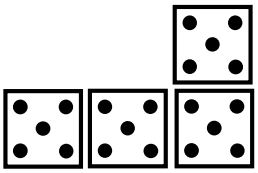
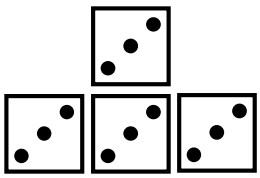
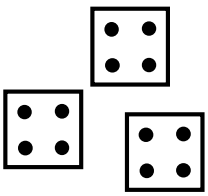
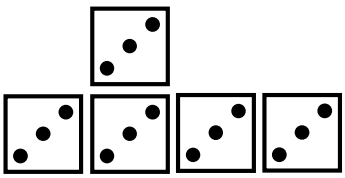
Match up

Teacher info: each pair/group have the cards cut out. Children match pictures to number sentences. One picture and one number sentence need to be completed.

$5 + 5 + 5 + 5 =$ ☐	
$4 + 4 + 4 + 4 + 4 =$ 20	
$4 + 4 + 4 + 4 =$ ☐	
$5 + 5 + 5 + 5 + 5 =$ ☐	
Missing number sentence:	
$5 + 5 + 5 =$ ☐	**Missing picture:**

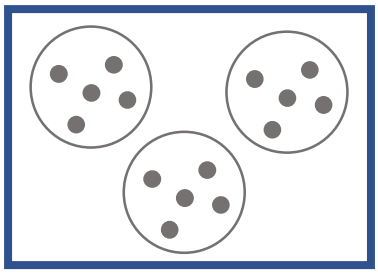
Match up

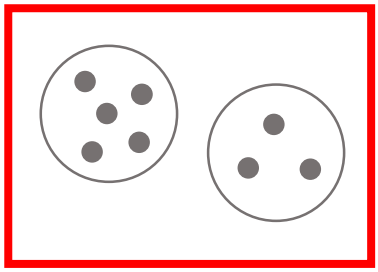
Teacher info: each pair/group have the cards cut out. Children match pictures to multiplication sentences. One picture needs to be completed.

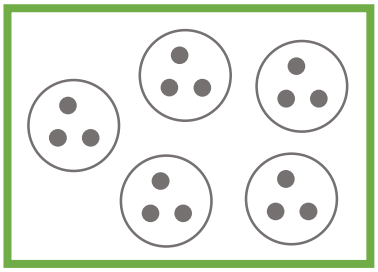
5 lots of 4 = 20 dots	
4 lots of ☐ = 20 dots	
4 lots of 3 = ☐ dots	
3 lots of 4 = ☐ dots	
5 lots of 3 = 15 dots	
☐ lots of 5 = 15 dots	Missing picture:

Agree or disagree?

5 lots of 3







Read the pictures

☐ hands ☐ fingers

☐ legs ☐ toes

☐ people ☐ toes

☐ eyes ☐ fingers

How many?

At my table there are:

☐ feet ☐ noses

☐ toes ☐ pockets

☐ _____ ← Do your own!

Number sentences

'lots of' sentence	+ sentence	× sentence
☐ lots of ☐	4 + 4 + 4	3 × 4
5 lots of 3	3 + 3 + 3 + 3 + 3	
4 lots of 2		
☐ lots of ☐		4 × 5

True or false? ✓ ✗

4+4+4 is the same as **3×4**

3+3+3+3 is the same as **5×3**

5+5+10 is the same as **5×4**

3+4+4+5 is the same as **4×4**

Fill the gaps

Spot the patterns

Count in 4

	4
	8
1	2
1	6
2	0
2	4
2	8
3	2
3	6
4	0

Count in ☐

1	
2	
3	
4	
5	
6	
7	
8	
9	
1	0

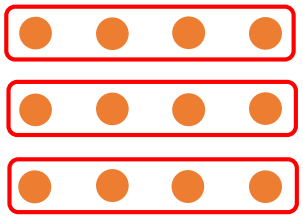
Count in ☐

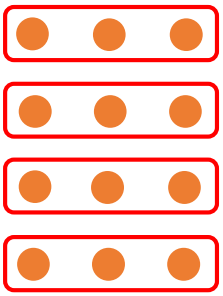
1	
1	
1	
1	
1	
2	

Count in ☐

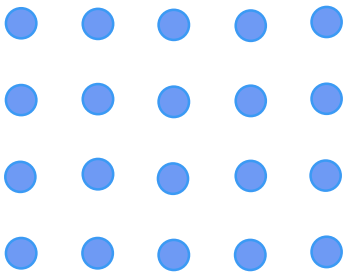
1	
1	
2	
2	
3	
3	
4	
4	
5	

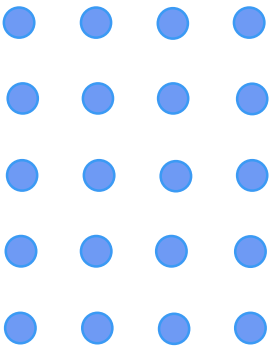
The same… different…





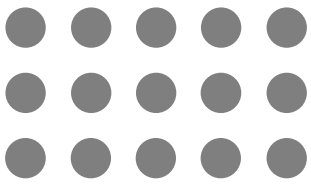
Spot the difference





True or false? ✓ ✗

$5 \times 3 = 15$ ✓



$5 + 5 + 5 = 15$

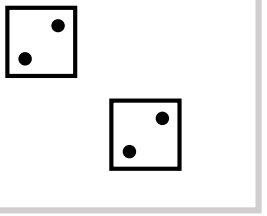
$3 \times 15 = 5$

$3 \times 5 = 15$

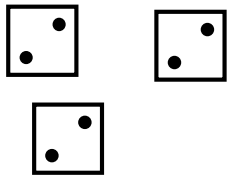
$3 + 3 + 3 + 3 = 15$

Finish the pictures

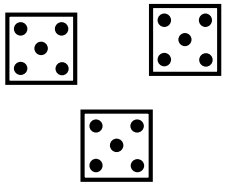
This is **6 × 2**



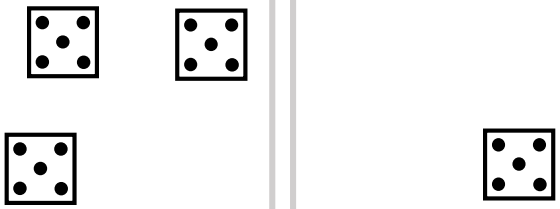
This is **5 × 2**



This is **6 × 5**



This is **7 × 5**



Explain

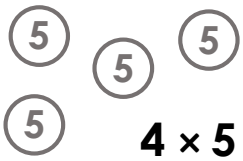
1 jug fills 3 bottles.

1 bottle fills 2 cups.

A jug fills ☐ cups.

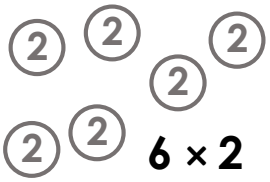
Finish the pictures

4 lots of **5** = ☐ lots of **10**



4 × 5 = ☐ **× 10**

6 lots of **2** = ☐ lots of **4**



6 × 2 = ☐ **× 4**

☐ lots of **5** = **3** lots of **10**

☐ **× 5** = **3 × 10**

☐ lots of **2** = ☐ lots of **4**

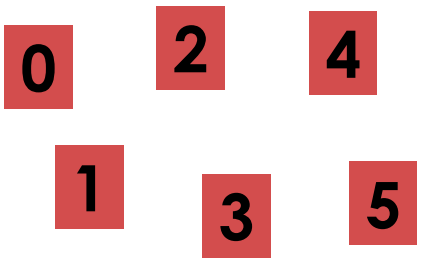
☐ **× 2** = ☐ **× 4**

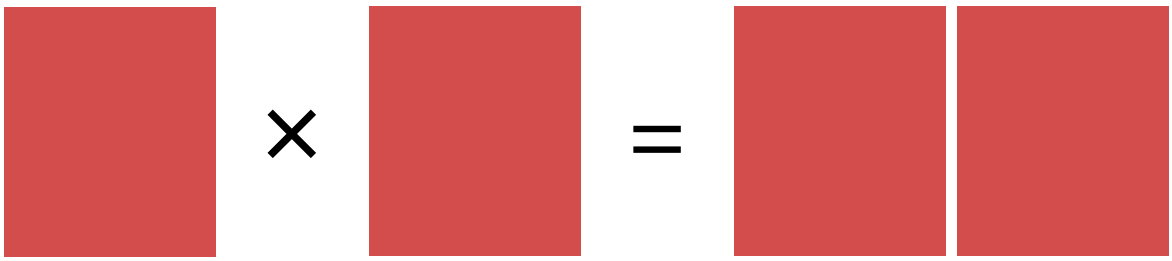
Digit cards game

You need digit cards 0 to 5

Use four of the cards.

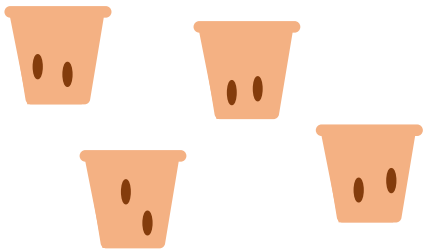
Complete the number sentence.





How many ways can you find?

Finish the pictures



4 pots

2 seeds in each pot

____ seeds in total

3 pots

____ seeds in each pot

9 seeds in total

____ pots

2 seeds in each pot

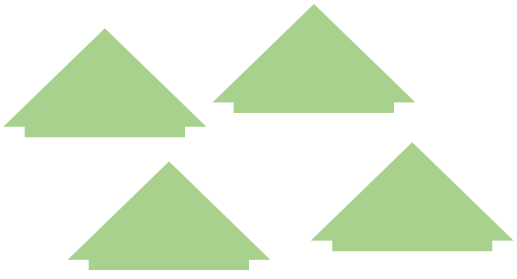
6 seeds in total

____ pots

____ seeds in each pot

10 seeds in total

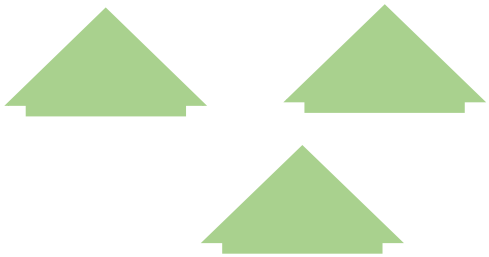
Finish the pictures



4 tents

5 in each tent

____ people in total



3 tents

____ in each tent

12 people in total

____ tents

2 in each tent

14 people in total

____ tents

____ in each tent

15 people in total

Fill the gaps

6	people
	eyes
	toes

	people
6	eyes
	toes

	people
	eyes
20	toes

Draw

blue line: ———————

*Draw a line **3 times longer** than the blue line:*

*Draw a line **half as long** as the blue line:*

Fill the gaps

——— **blue**

——————— **red**

————————————————— **green**

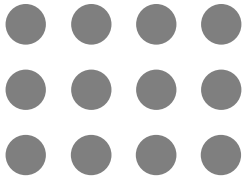
The [ ] line is **half** as long as the **red** line.

The green line is **4 times** longer than the [ ] line.

True or false? ✓ ✗

$4 \times 3 = 12$ ✓

$3 \times 4 = 12$



$12 \times 3 = 4$

$12 = 3 \times 4$

$4 \div 12 = 3$

$12 \div 4 = 3$

$12 \div 3 = 4$

$3 \div 12 = 4$

True or false? ✓ ✗

$4 \times 5 = 20$ ✓

$20 \times 4 = 5$

$20 = 4 \times 5$

20			
5	5	5	5

$20 \div 4 = 5$

$20 \div 5 = 4$

$5 \div 20 = 4$

Different ways

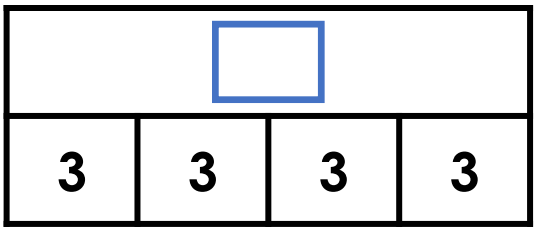
Use the bar model to make number sentences.

20			
5	5	5	5

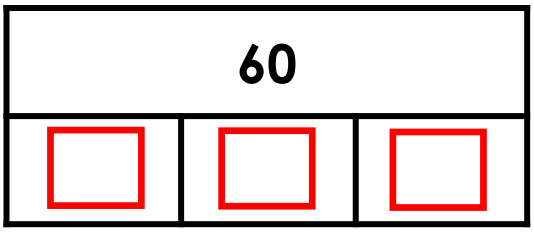
$= \quad + \quad \times \quad \div$

How many ways can you find?

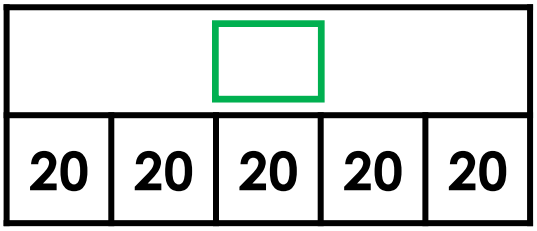
Fill the gaps



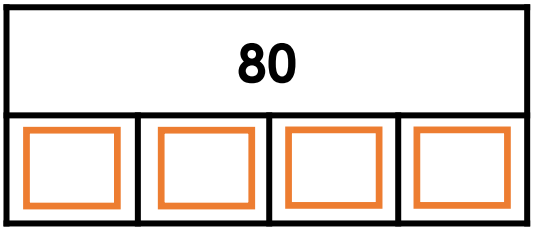
□ × 3 = □



60 ÷ □ = □



□ × 20 = □



80 ÷ □ = □

Explore

With **12 matchsticks**
I can make:

□ triangles

□ squares

□ pentagons

With **15 matchsticks**
I can make:

□ triangles

□ squares

□ pentagons

Odd one out

$4 \times \square = 20$

$20 \times 4 = \square$

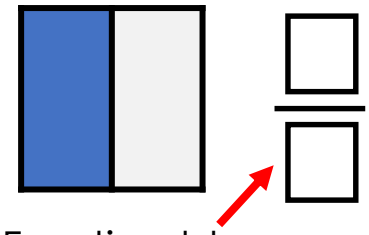
$20 \div 4 = \square$

Read the pictures

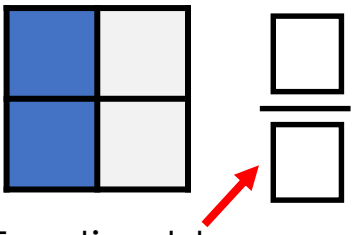
20 dots in each picture. Some dice are hiding.

In each picture, ***how many dice are hiding?***

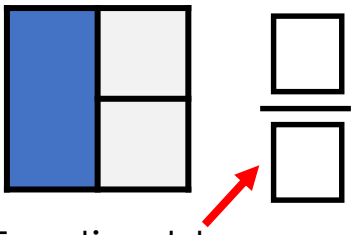
Spot the difference



Fraction blue

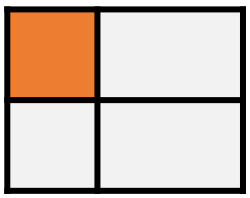


Fraction blue

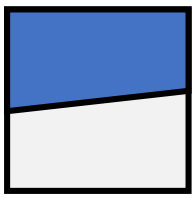


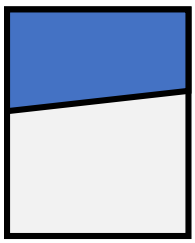
Fraction blue

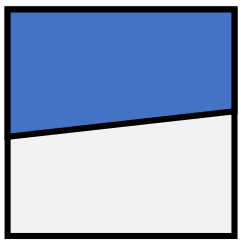
The same… different…



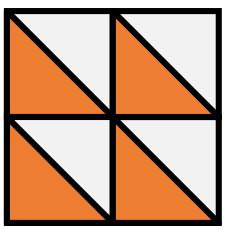
Odd one out



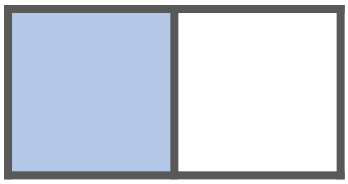


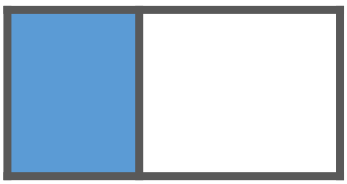


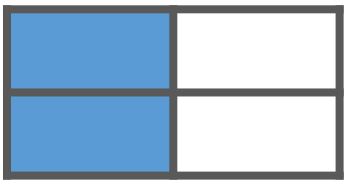
The same… different…



Odd one out





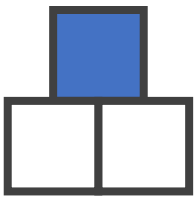


Challenge: think of a reason for each shape.

True or false?

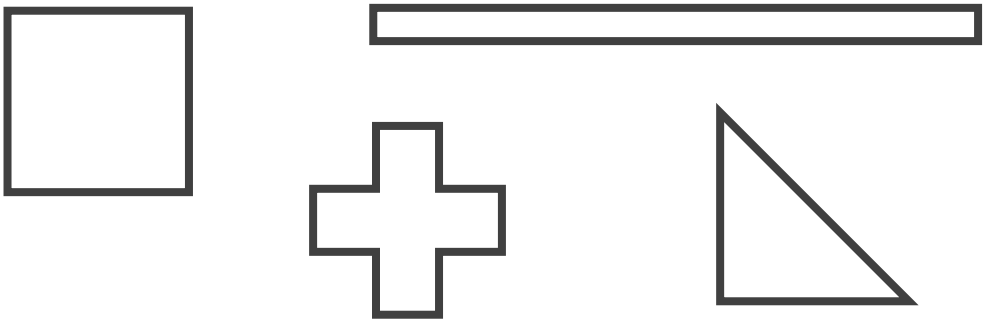
✓ ✗

Is it $\frac{1}{2}$ blue?



Draw

Colour $\frac{1}{2}$ of each shape:

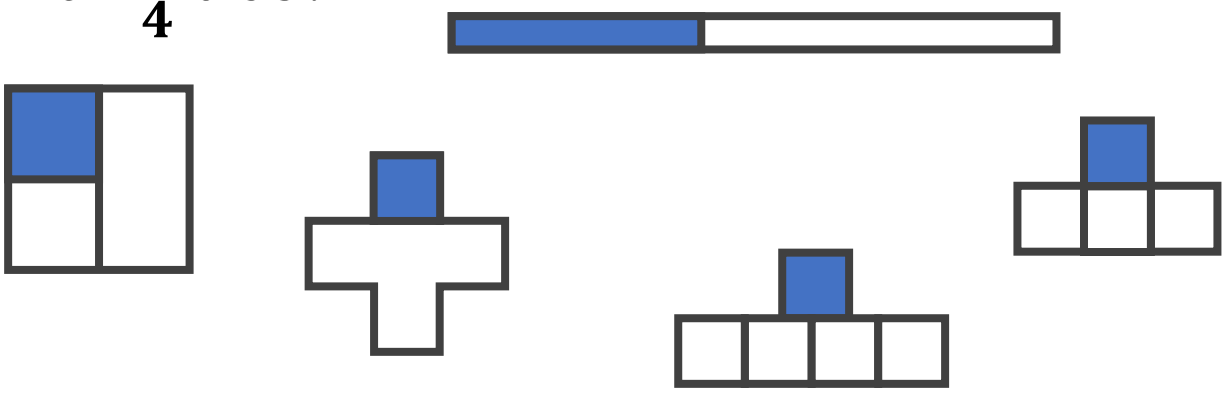


Spot the difference

True or false?

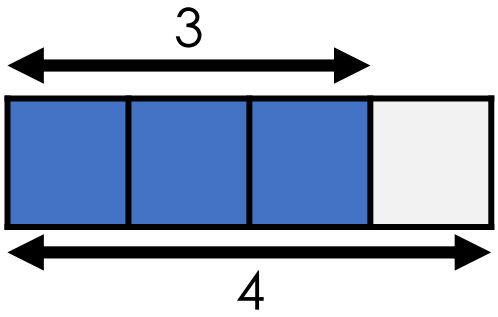
✓ ✗

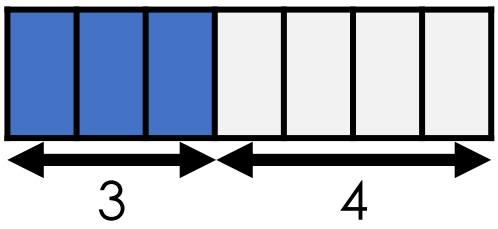
Is it $\frac{1}{4}$ blue?



Which picture?

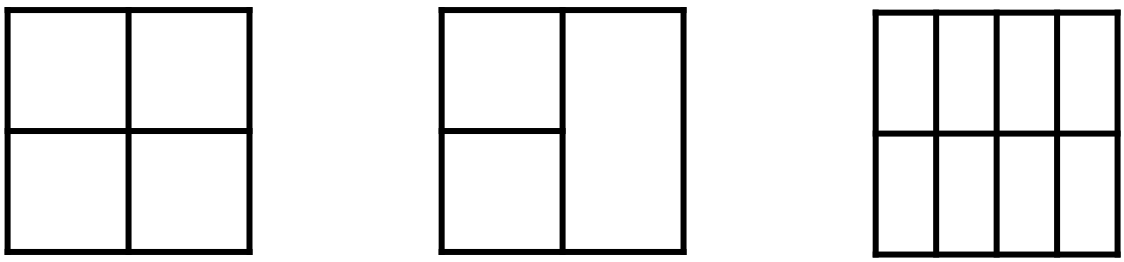
Which picture is $\frac{3}{4}$ blue?





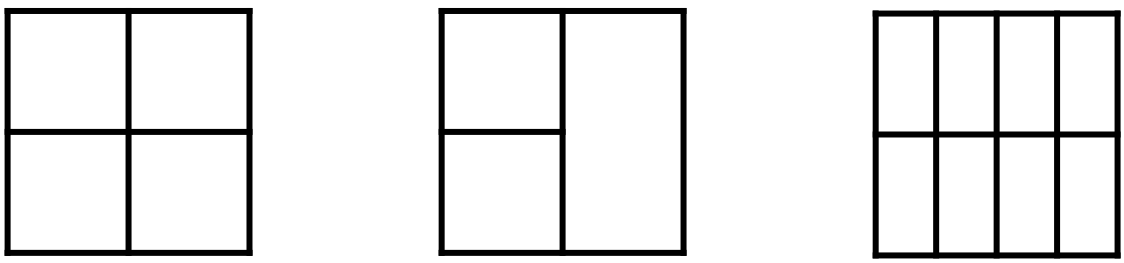
Draw

Shade $\frac{1}{4}$ of each shape.



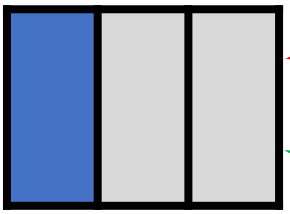
Draw

Shade $\frac{3}{4}$ of each shape.



Which answer?

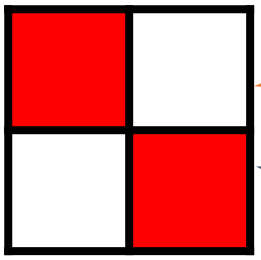
Is it $\frac{1}{2}$ blue?



Yes. 1 blue and 2 grey.

No. There are 3 parts.

Is it $\frac{1}{2}$ red?



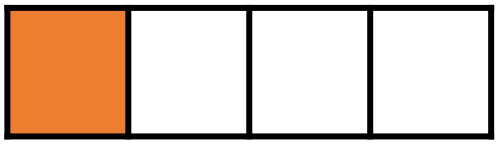
Yes. Same red / white.

No. There are 4 parts.

Fill the gaps

$\frac{1}{\square}$

$\frac{1}{\square}$

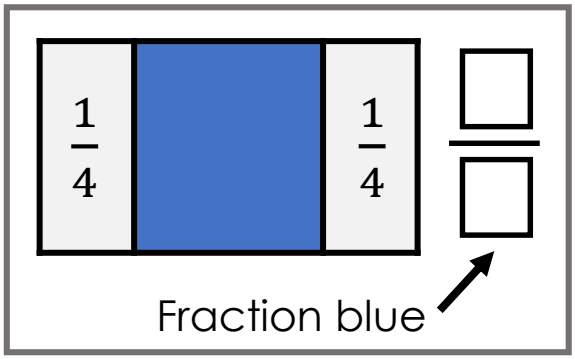


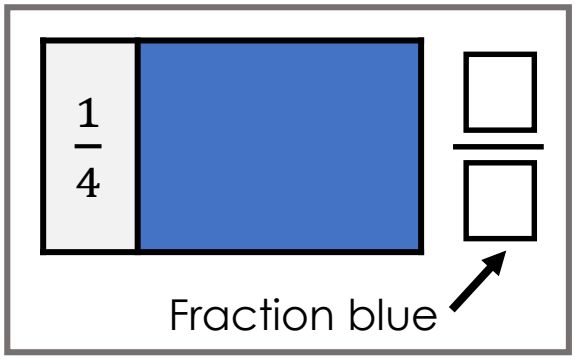
$\frac{1}{\square}$

What do you notice?

Read the pictures

What fraction is blue?





Draw

Mark $\frac{1}{2}$ way on each line.

What do you notice?

Draw

Mark $\frac{1}{4}$ way along each line.

What do you notice?

Fill the gaps

The **class** is part of the ____.

The ____ is part of the **zoo**.

Your **nose** is part of your ____.

The ____ is part of the **family**.

Cheese is part of the ____.

Your ____ are part of your **feet**.

Words:
pizza
lion
baby
school
toes
face

Fill the gaps

Use each word **twice:** **Words:** hand, finger, arm

Your **nail** is part of your ____.

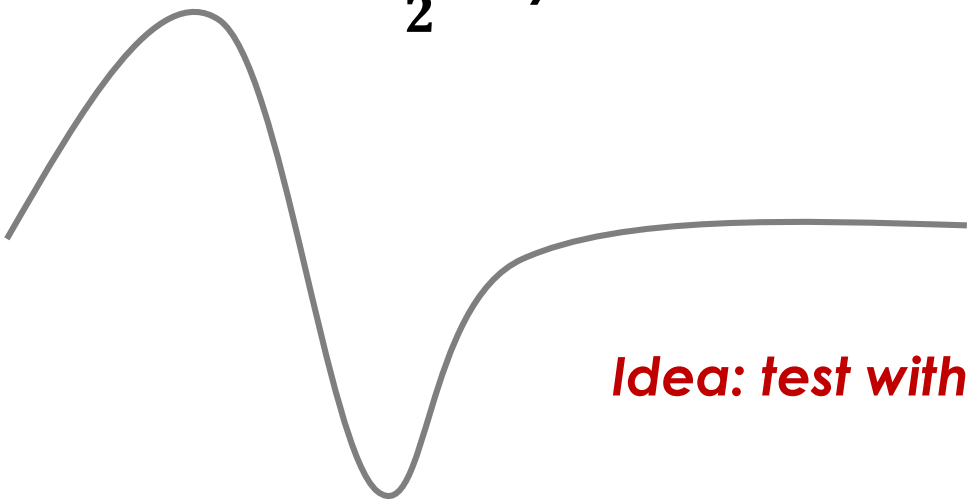
Your ____ is part of your ____.

Your ____ is part of your ____.

Your ____ is part of your **body**.

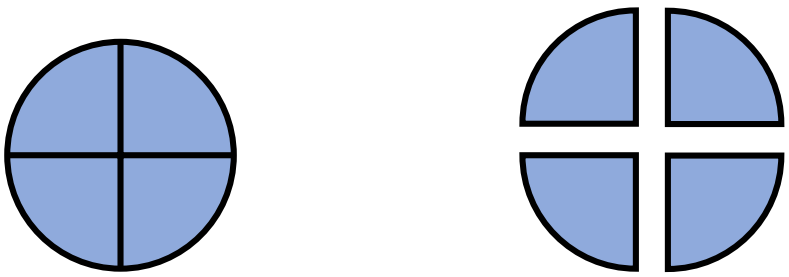
Draw

Mark $\frac{1}{2}$ way on the line.

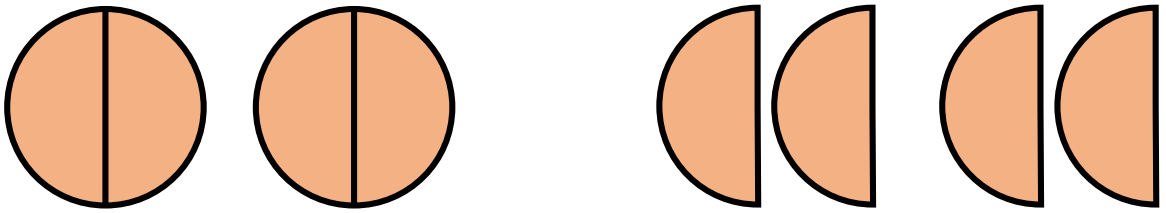


Idea: test with string

The same… different…

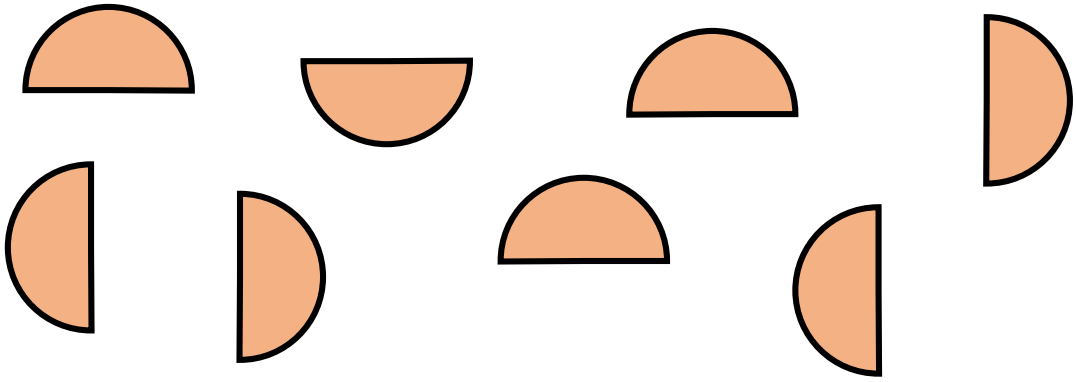


The same… different…



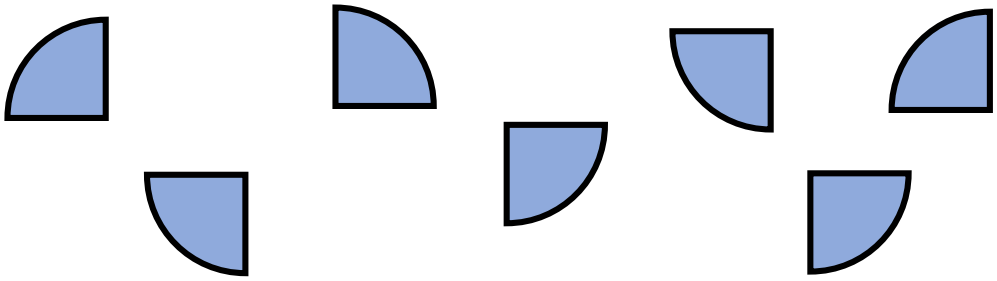
Explain

How many halves make 3 circles?



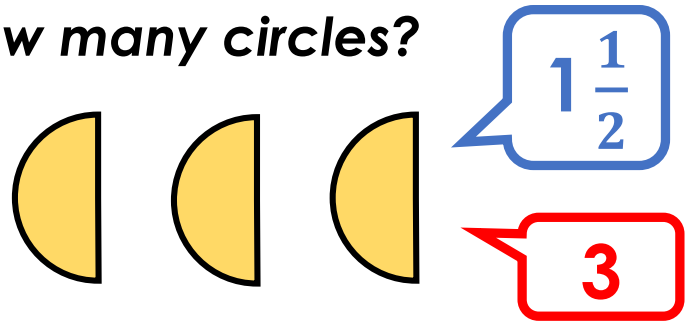
Explain

How many quarters make one circle?



Which answer?

How many circles?



Spot the patterns

Fill the gaps:

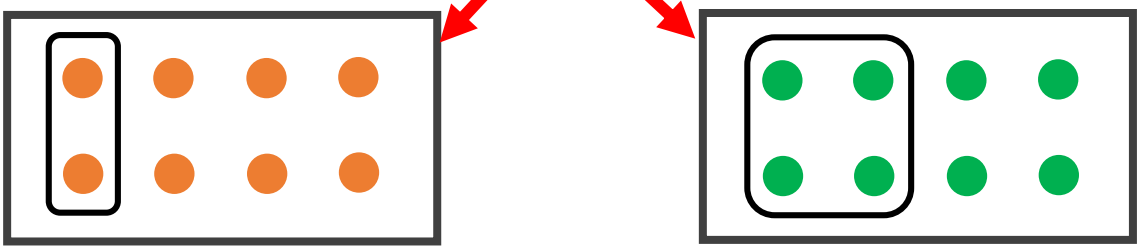
$\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \square$

$0, \frac{1}{2}, \square, 1\frac{1}{2}, 2, \square$

$0, \square, \frac{1}{2}, \square, 1$

Which picture?

Which picture shows $\frac{1}{4}$ of 8?

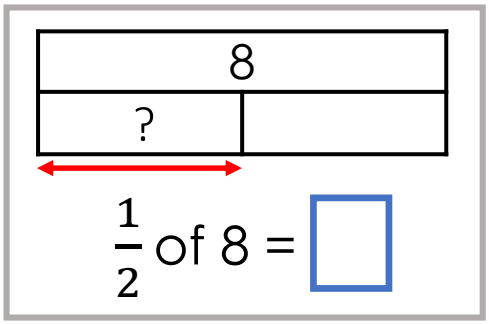


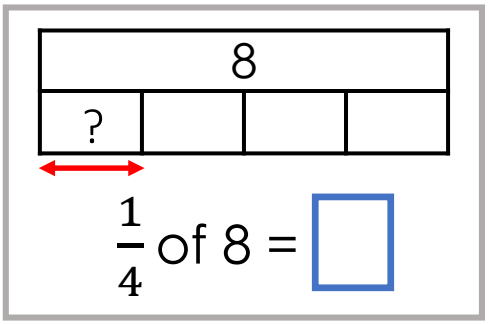
Read the picture

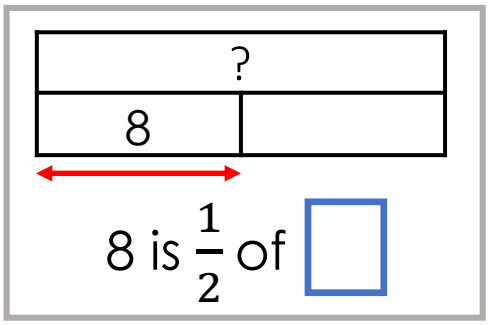
This is half of the team.

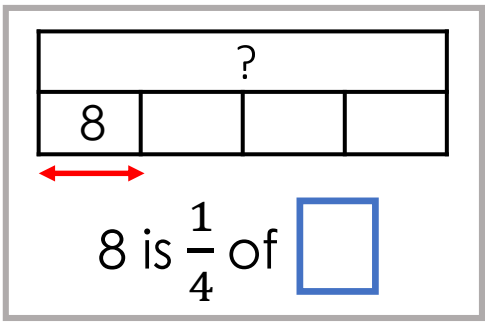
☐ **players in the team.**

Fill the gaps

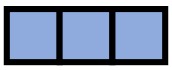




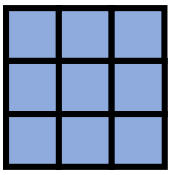


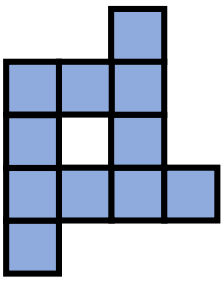


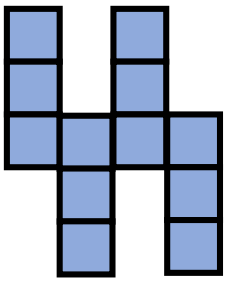
Read the pictures



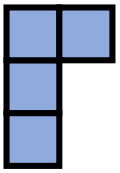
This is $\frac{1}{4}$ of which shape? *Circle.*





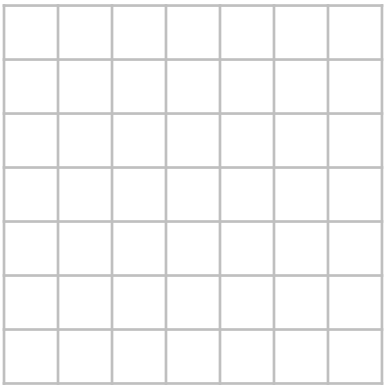


Draw

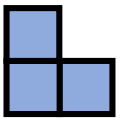


This is $\frac{1}{4}$ of a square.

Draw the square.

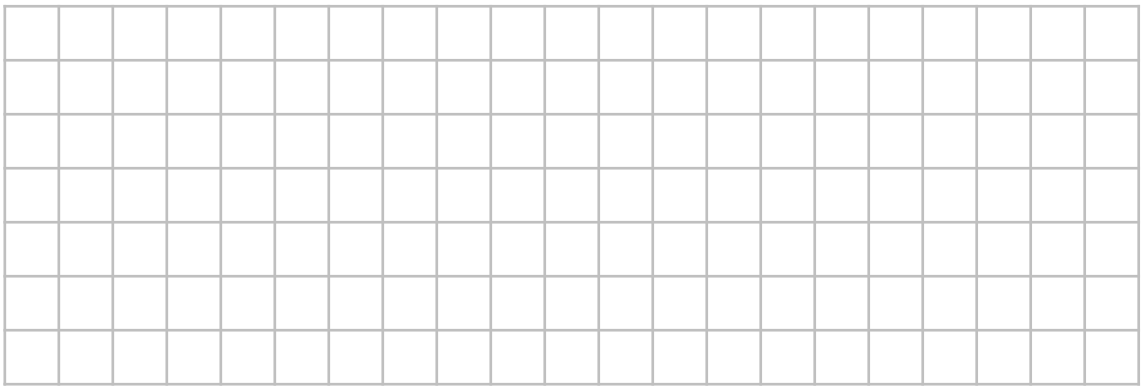


Different ways



This is $\frac{1}{4}$ of a rectangle.

Draw the rectangle. Do in two ways.



Fill the gaps

Use each word: bigger, smaller, heavier, lighter

A **balloon** is ☐ than a **tennis ball.**

A **balloon** is ☐ than a **tennis ball.**

A **tennis ball** is ☐ than a **balloon.**

A **tennis ball** is ☐ than a **balloon.**

Fill the gaps

Use each word: shorter, taller, lighter, heavier

A **giraffe** is ☐ and ☐ than an **elephant**.

An **elephant** is ☐ and ☐ than a **giraffe**.

Fill the gaps

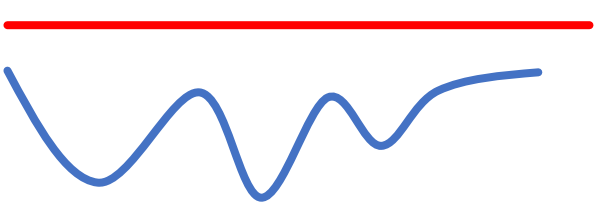
A ☐ is **smaller** and **lighter** than a ☐.

A ☐ is **bigger** and **lighter** than a ☐.

Read the picture

Which rectangle is bigger?

Read the picture



The ☐ line is longer.

red/blue

The ☐ line is shorter.

Which answer?

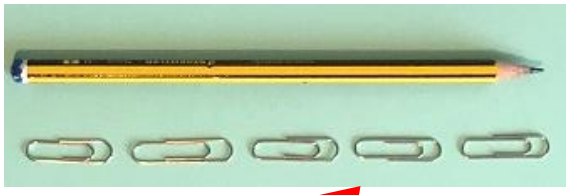
How long is the pencil crayon?

8cm

10cm

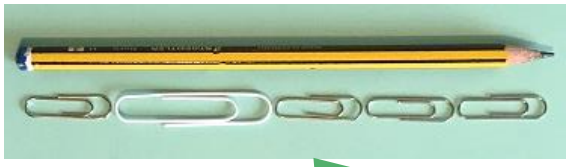
Which answer?

The pencil is the same length as how many paperclips?



5 paperclips

6 paperclips



5 paperclips

Explain the mistakes

Explain

What would you use to measure…

Circle

tape measure

ruler

your little finger

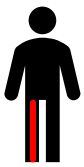

OR


around your head


OR


the length of your leg


OR

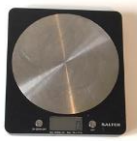



Explain

Which measuring tool would you use when…

trundle wheel

tape measure



weighing scales

Marking out a football pitch?

Buying an apple?

Measuring a tree trunk?

Cooking some pasta?

Different ways

A fish tank – what can be measured?

The fish tank's _____ using a _____.

The fish tank's _____ using a _____.

The fish tank's _____ using a _____.

The fish tank's _____ using a _____.

You can measure:	
weight	length
capacity	temperature

Tools to measure:	
ruler	thermometer
scale	measuring jug

Predict and measure

Predict which line is the **shortest** and the **longest**.

____cm

____cm

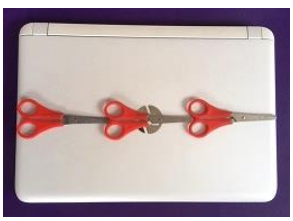
____cm

Measure the lines. *What do you notice?*

I know… so…

A **pair of scissors** is about the same length as **7 cubes**.

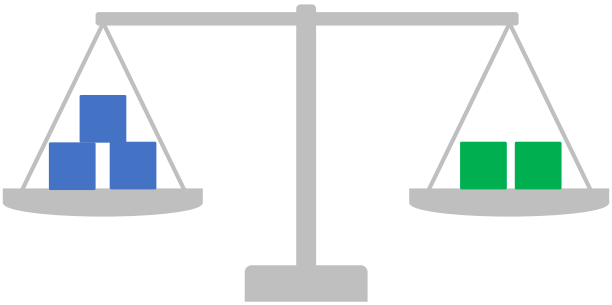
A **lap top** is about the same length as **3 pairs of scissors**.



A lap top is about the same length as ☐ cubes.

Which answer?

The scales balance.



One blue block weighs the same as one green block.

One blue block is lighter than one green block.

One blue block is heavier than one green block.

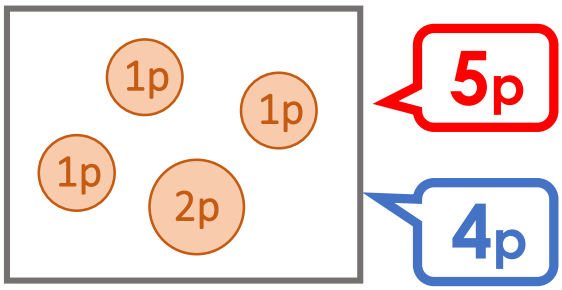
Explain why.

Explain

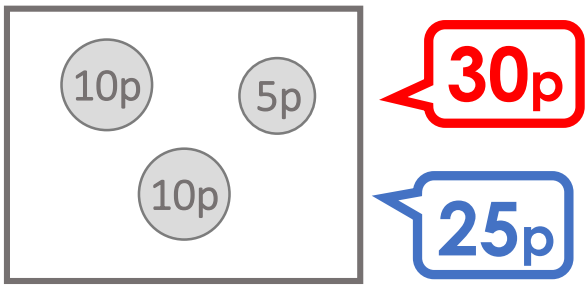
These scales balance.

A red block weighs the same as ☐ yellow blocks.

Which answer?

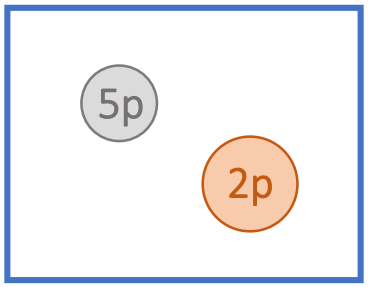


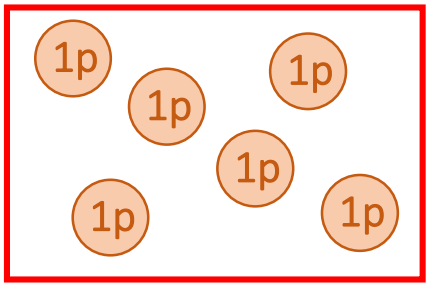
Which answer?



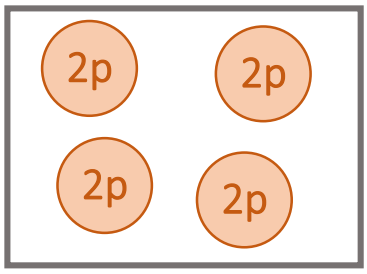
Read the picture

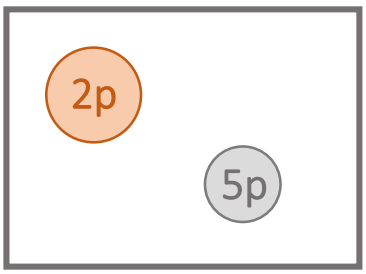
Which is more money?

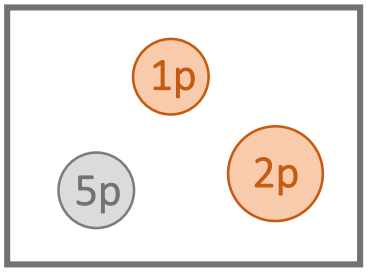




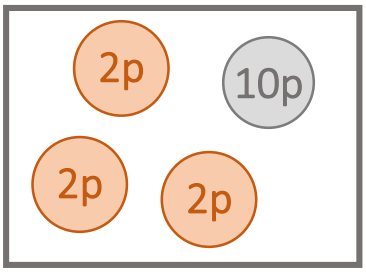
Is it 7p? ✓ ✗

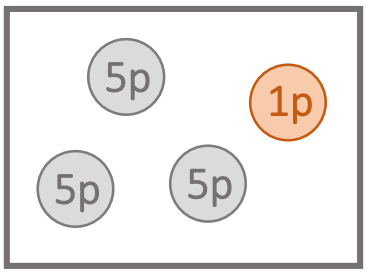


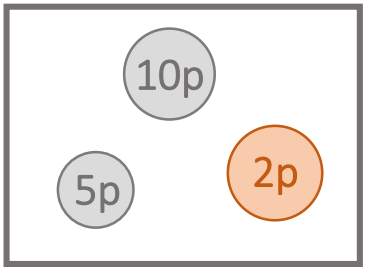




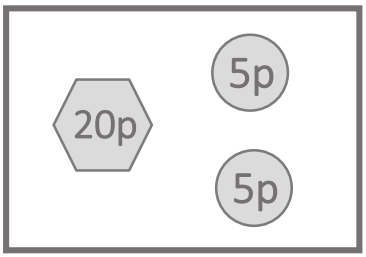
Is it 16p? ✓ ✗

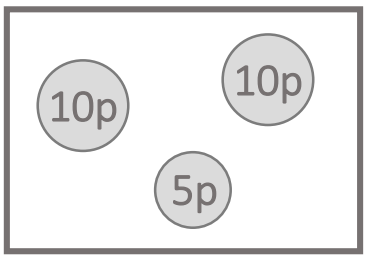


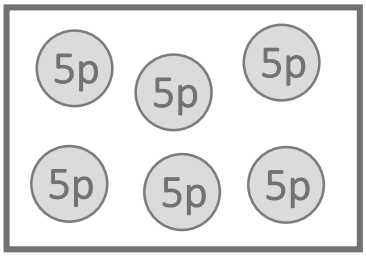




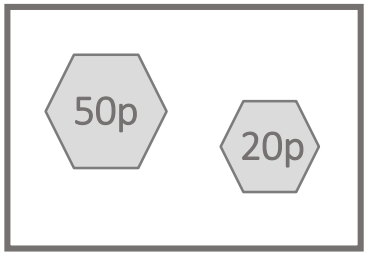
Is it 30p? ✓ ✗

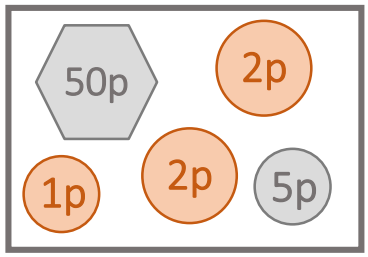


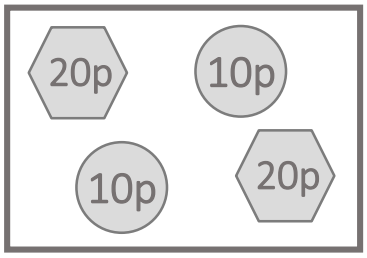




Is it 60p? ✓ ✗







Agree or disagree? ✓ ✗

Can you make 6p with two coins?

Yes: 3p plus 3p is 6p

Agree or disagree? ✓ ✗

Can you make 8p with two coins?

Yes: 4p plus 4p is 8p

I can buy…

You have these coins.

Circle each toy that you can buy.


35p


38p


30p


28p

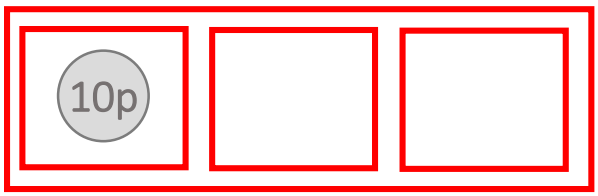
Two ways

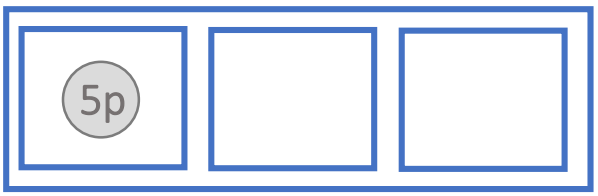
Make each amount in two ways.
You can use each coin more than once.

5p	5p
6p	6p
11p	11p
30p	30p

Two ways

3 coins add to make 12p





Fill the gaps

	price	pay with...	change
	3p	2p 2p	

	price	pay with...	change
	6p	10p	

	price	pay with...	change
	3p		2p

Explain the mistakes

	price	pay with...	change
	3p	2p	1p

	price	pay with...	change
	6p	10p	4p

Fill the gaps

	price	pay with...	change
	35p	20p 10p 10p	

	price	pay with...	change
	38p		10p 2p

	price	pay with...	change
		50p	20p

Explain the mistakes

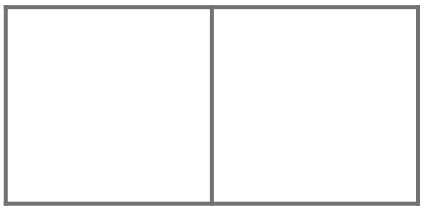
	price	pay with...	change
	16p	20p	4p

	price	pay with...	change
	28p	20p 5p	2p 1p

Different ways

Make 6p

2 coins



3 coins

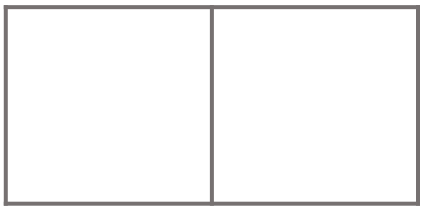
4 coins

5 coins

Different ways

Make 20p

2 coins



3 coins

4 coins

5 coins

How many ways?

Make 60p

Use 5 coins

Fill the gaps

I brush my teeth [before **OR** after] I eat my breakfast.

I get dressed [before **OR** after] I wake up.

I do maths [before **OR** after] my lunch.

Which measure?

Eat lunch
minutes **OR** hours

Do 10 jumps
seconds **OR** minutes

Sleep at night
minutes **OR** hours

Brush teeth
seconds **OR** minutes

Which answer?

How many hours in a day?

24

12

Which answer?

How many minutes in an hour?

True or false?

✓ ✗

1 minute is the same as **60 seconds.**

1 day is the same as **60 hours.**

1 month is the same as **7 days.**

1 week is the same as **7 days.**

Fill the gaps

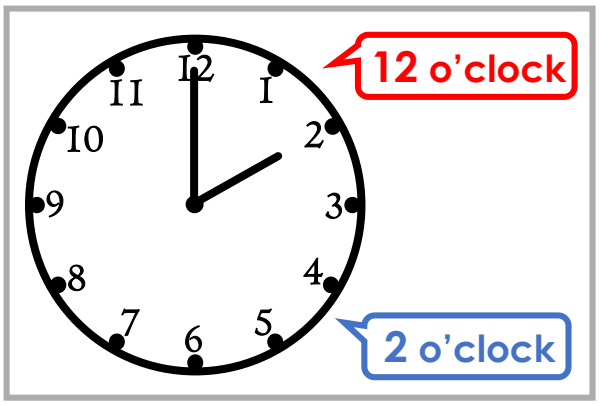
Use a <, = or > sign in each blue box.

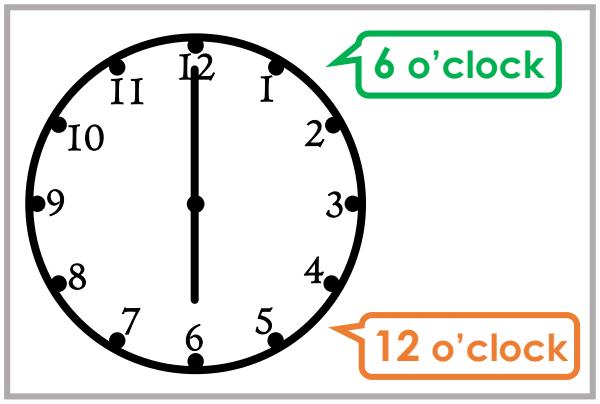
1 minute ☐ 100 seconds

1 day ☐ 60 hours

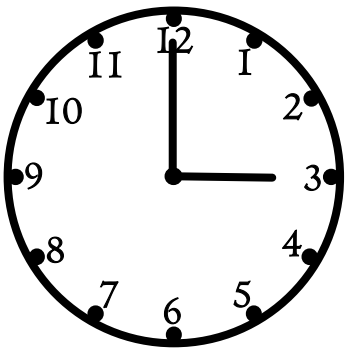
1 second ☐ 60 minutes

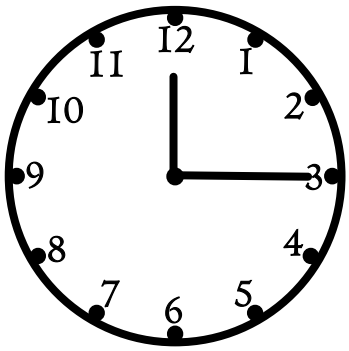
Which answer?





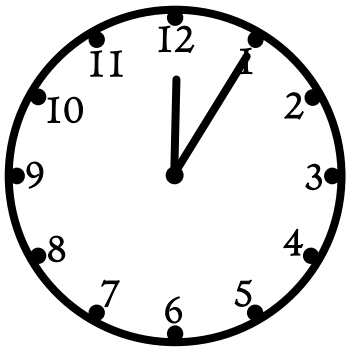
Spot the difference





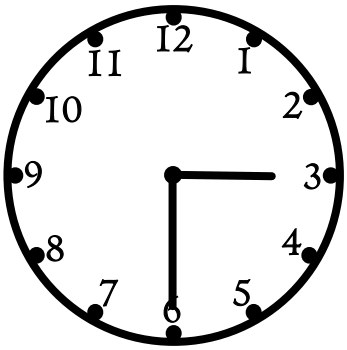
Which shows 3 o'clock?

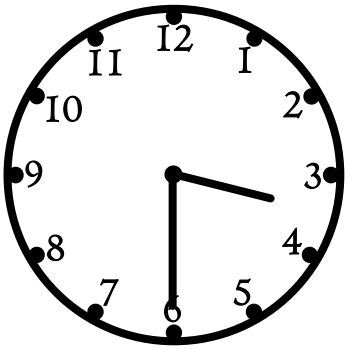
Explain the mistake



The time is 1 o'clock

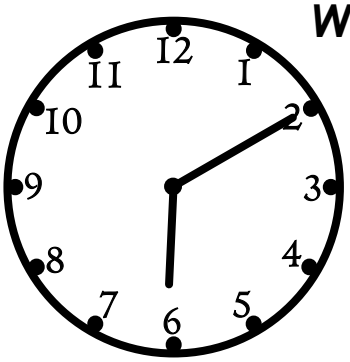
Spot the difference

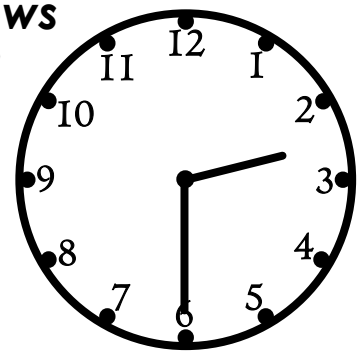




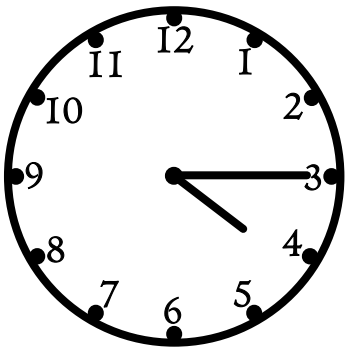
Which clock?

Which clock shows half past two?





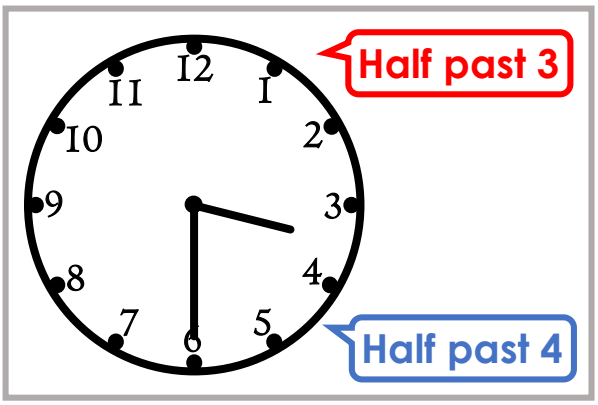
True or false? ✓ ✗

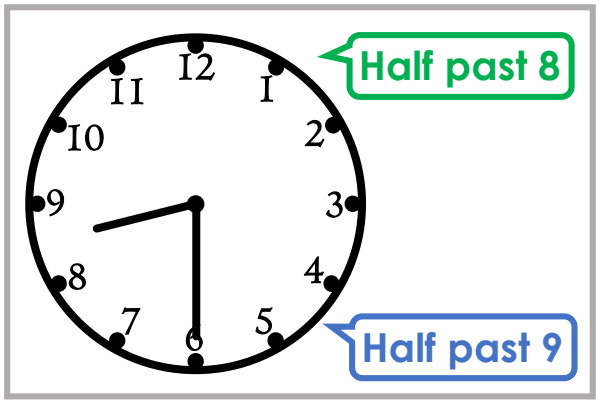


Quarter past four

4:15

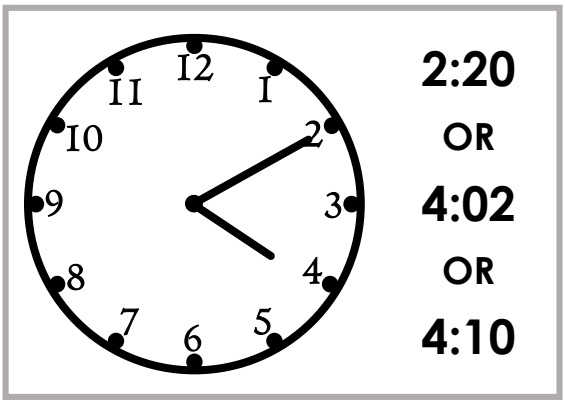
Which answer?

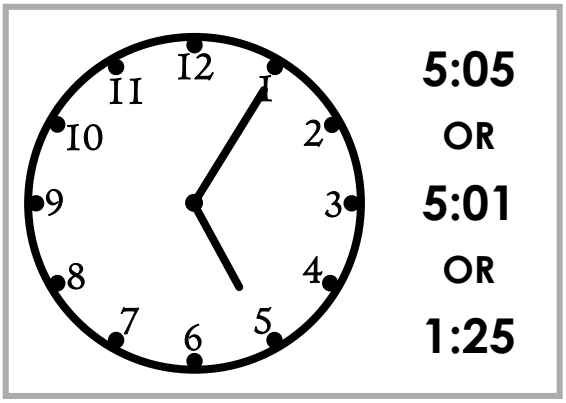




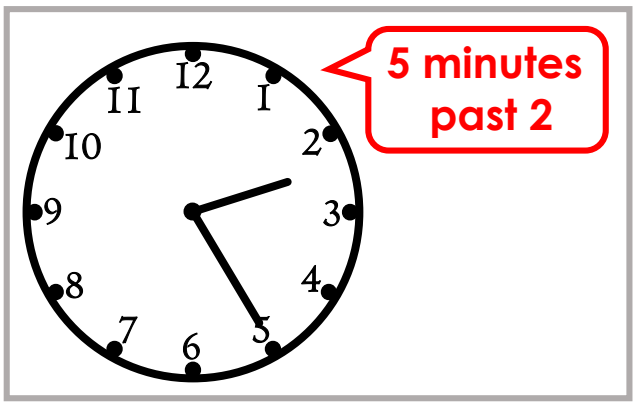
Which answer?

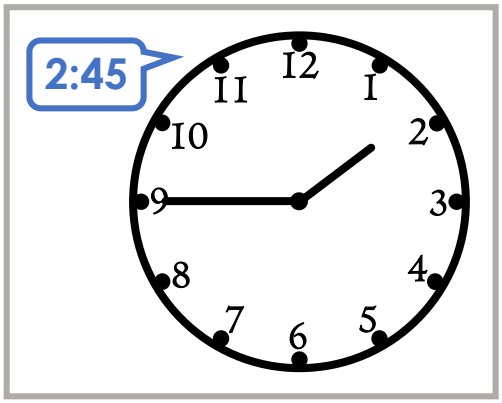
Circle the correct time.





Explain the mistakes

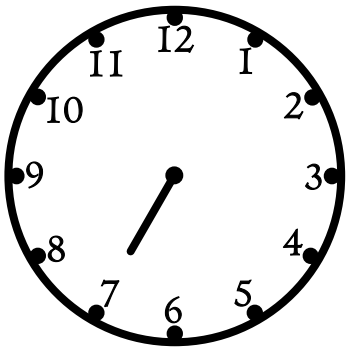




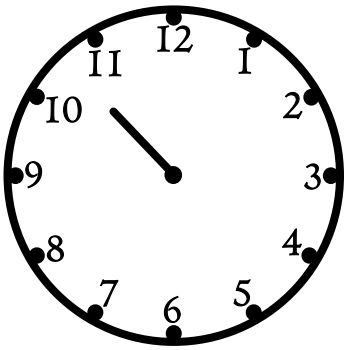
Missing hand

Draw the missing hand on each clock.

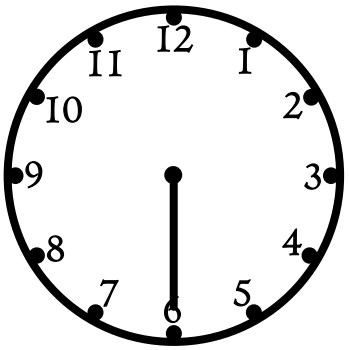
7:00pm



10:30am



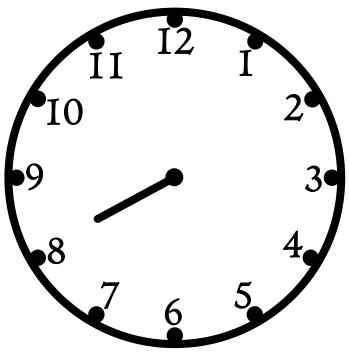
9:30pm



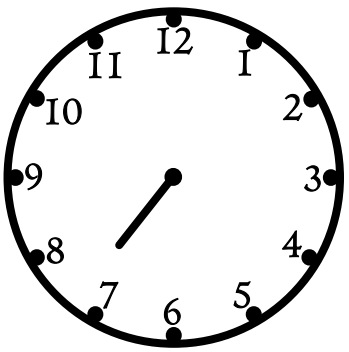
Missing hand

Draw the missing hand on each clock.

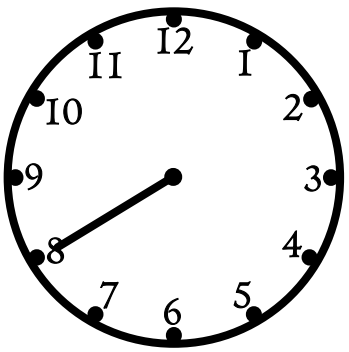
8:10pm



7:15am



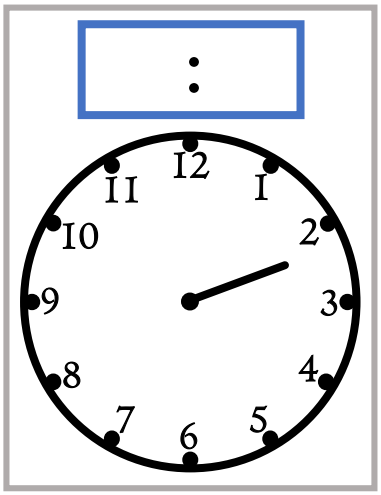
2:40pm

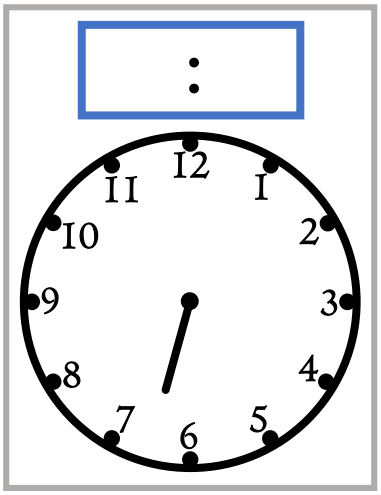


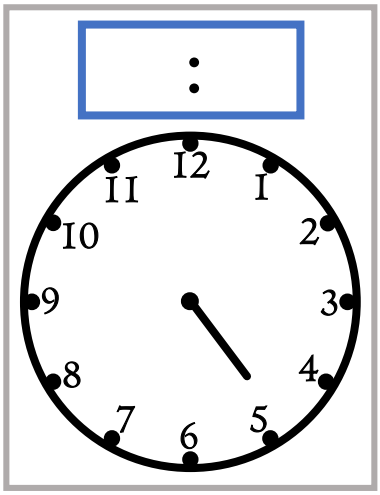
Estimate

The minute hand is missing on each clock.

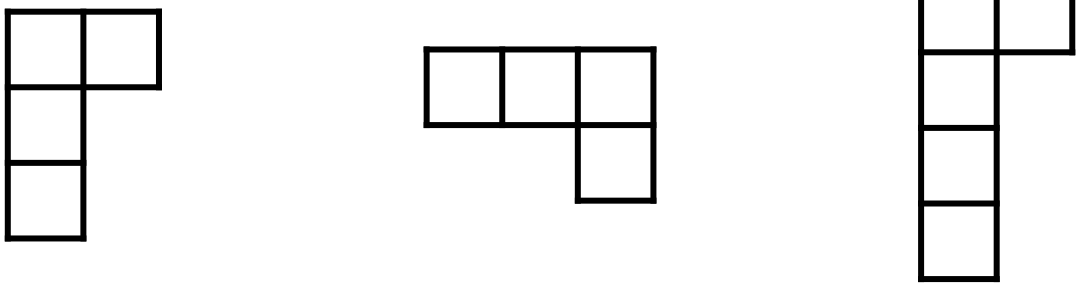
Estimate the times.



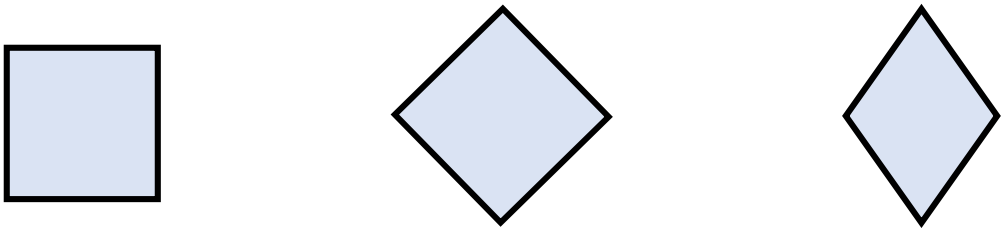




Odd one out



Odd one out



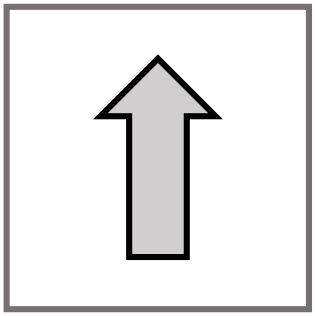
The same… different…

The same… different…

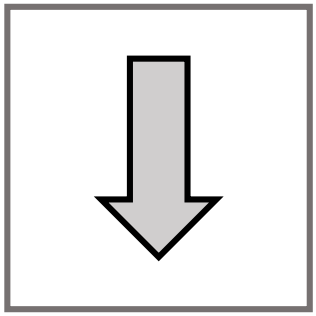
Which answer?

The arrow is turned.

Before:



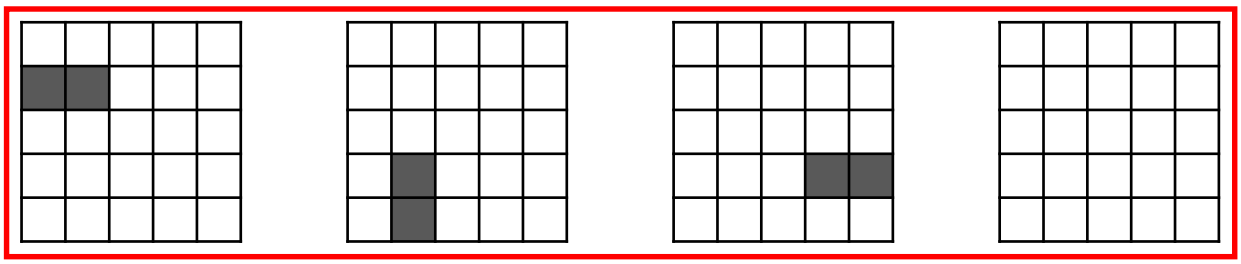
After:

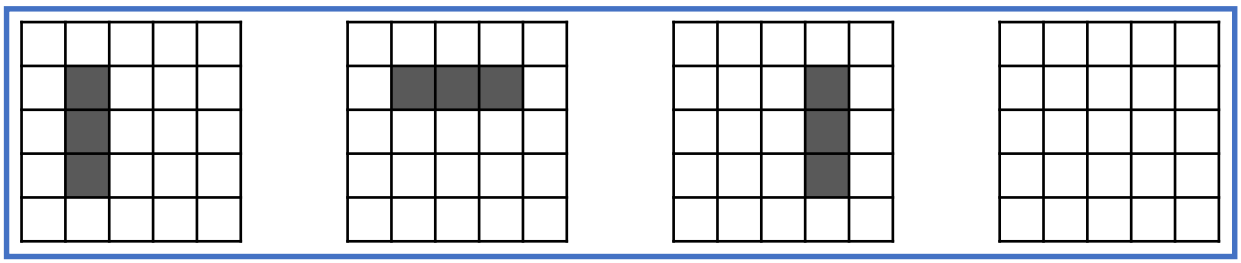


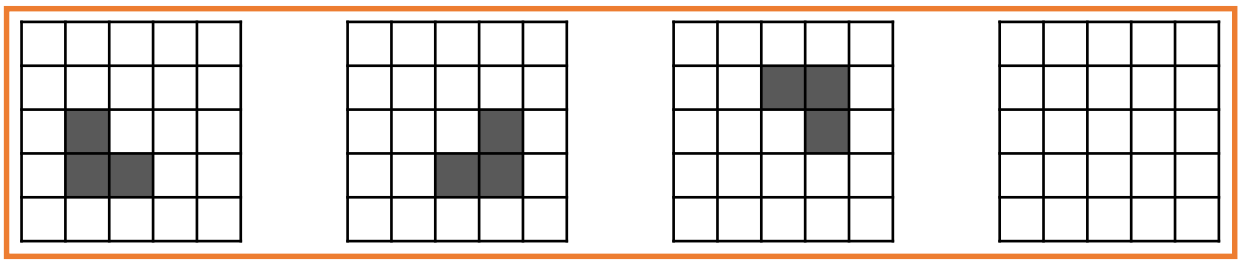
This is a whole turn

This is a half turn

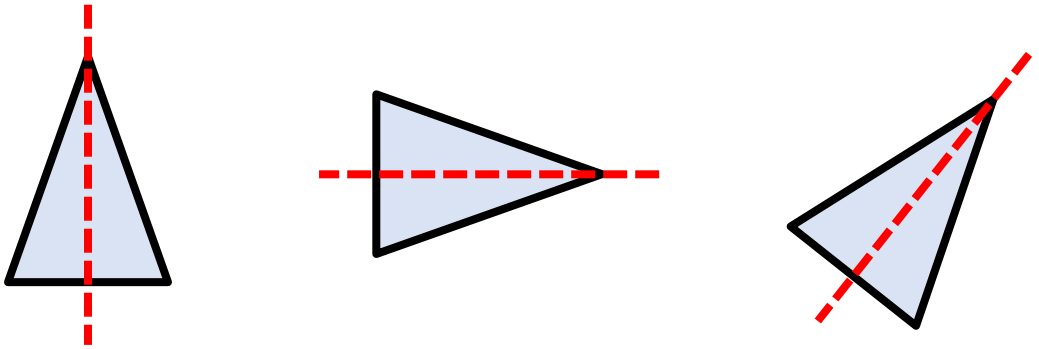
Finish the patterns





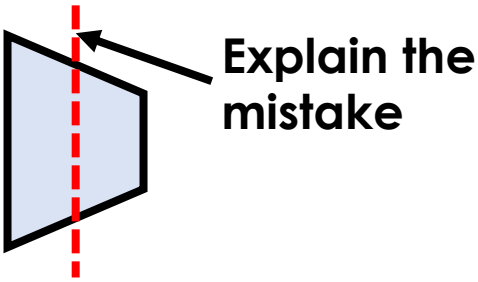


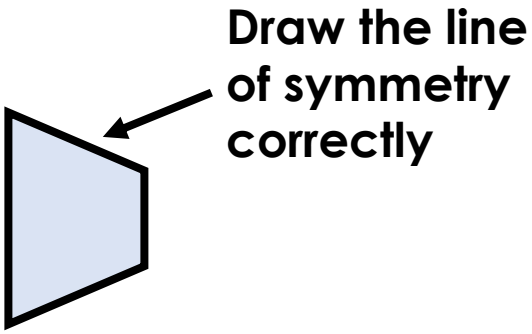
The same… different…



Explain the mistake

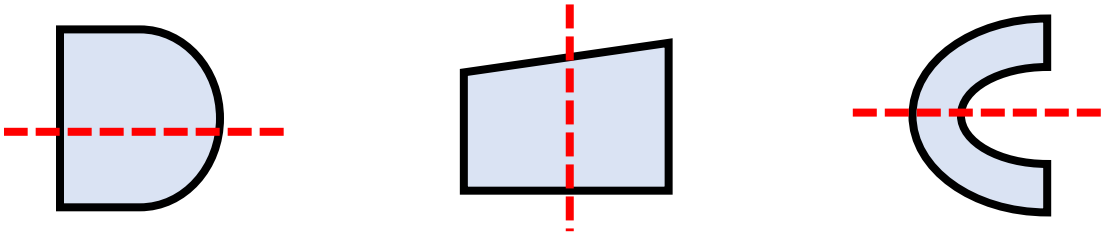
Draw the line of symmetry.



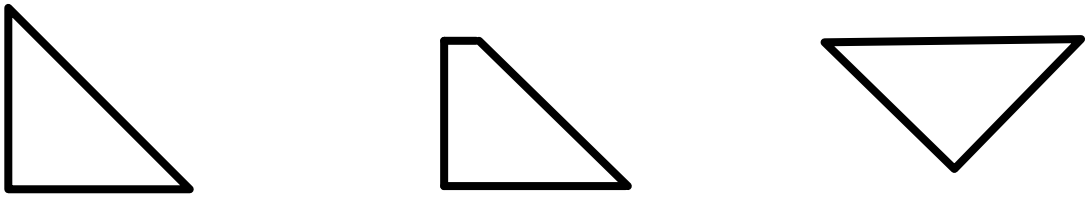


True or false?

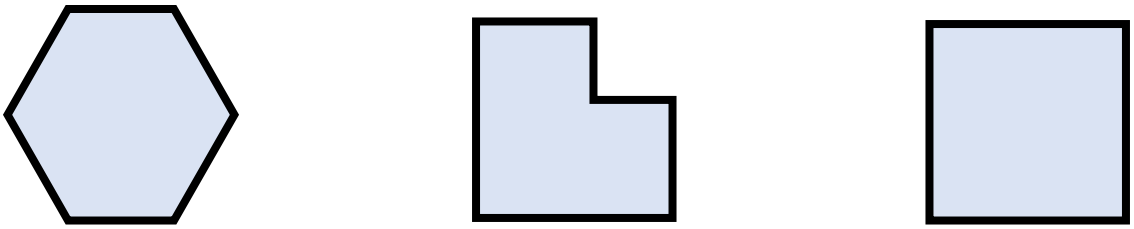
The dotted lines – are they lines of symmetry?



Odd one out

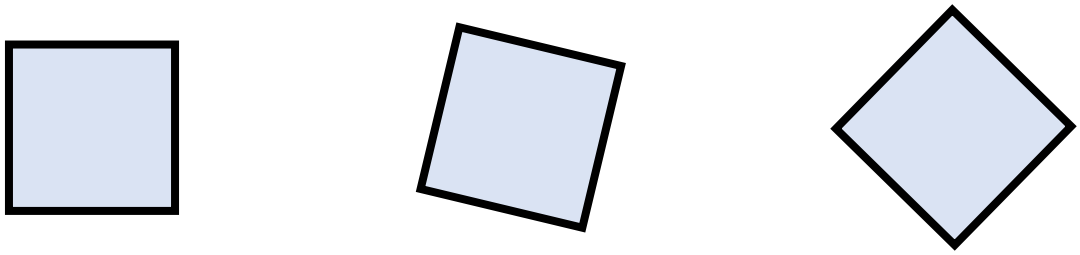


Odd one out

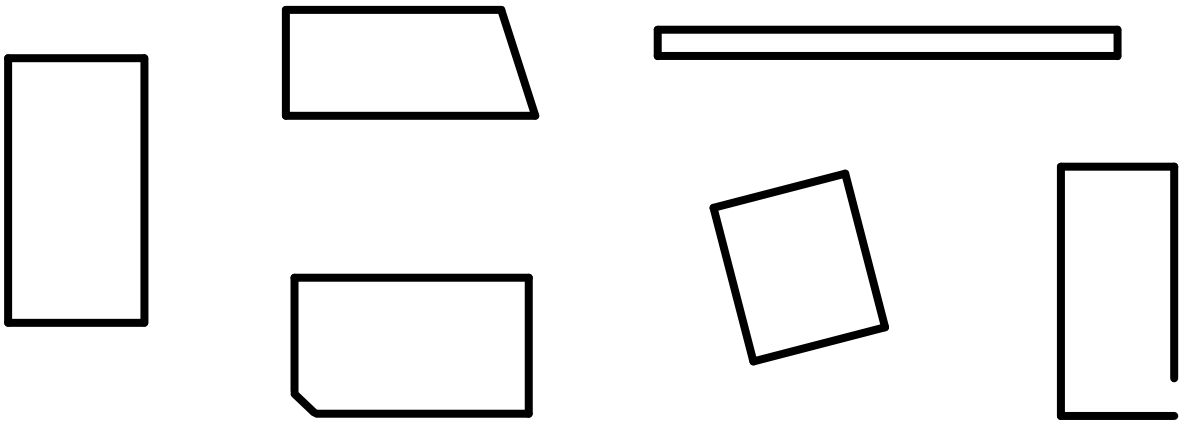


Spot the difference

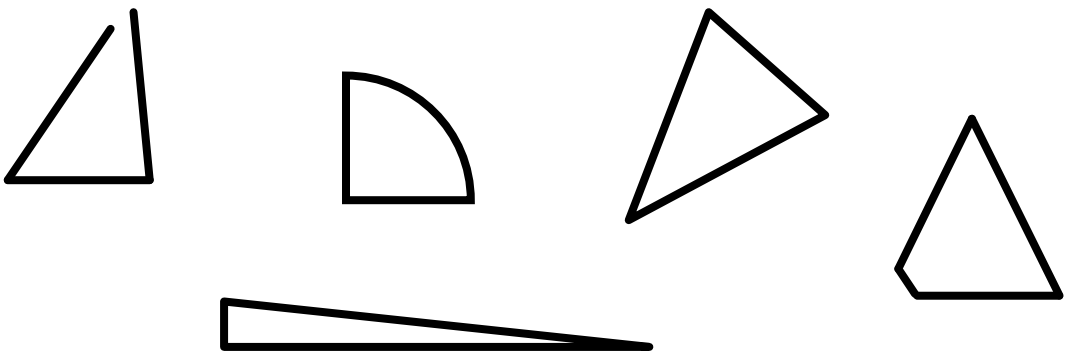
The same… different…



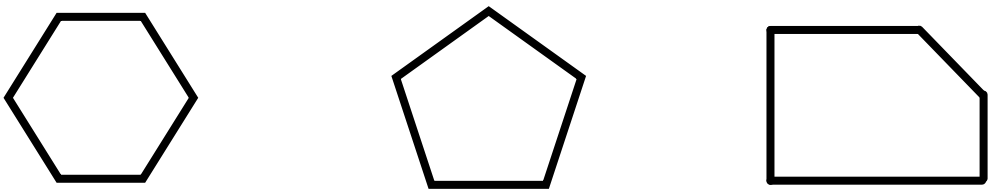
Is it a rectangle? ✓ ✗



Is it a triangle? ✓ ✗

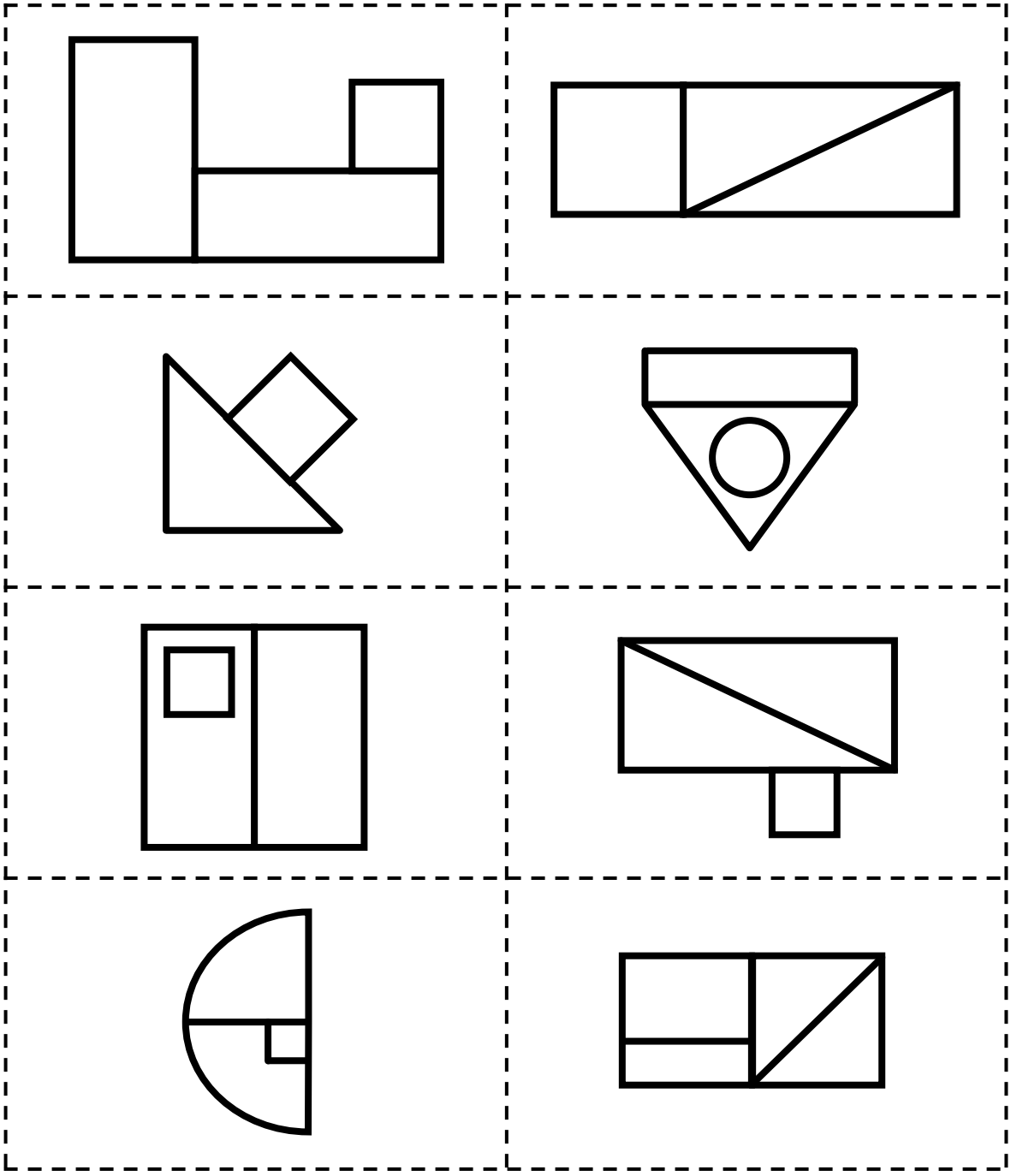


Is it a pentagon? ✓ ✗



Explain

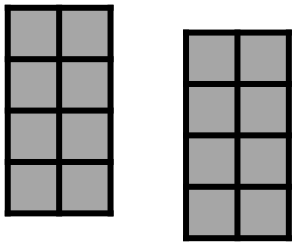
Teacher info: children in pairs. Cut out the cards. One partner describes the image, the other draws it. To finish, compare the image to the drawing.

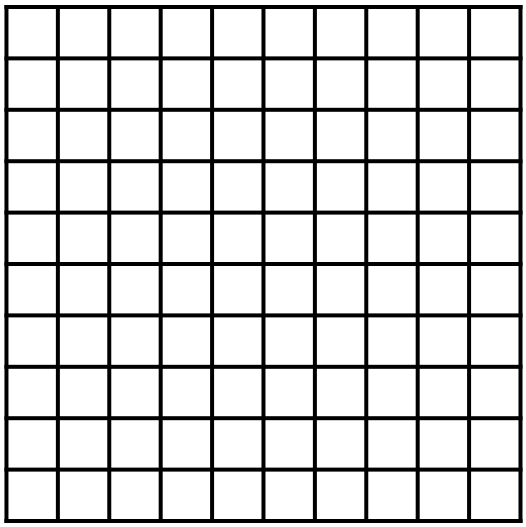


Draw

Imagine joining the rectangles together to make a square.

Draw the square here.



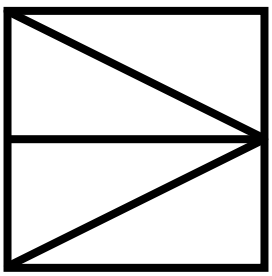


Imagine joining the rectangles together to make a rectangle.

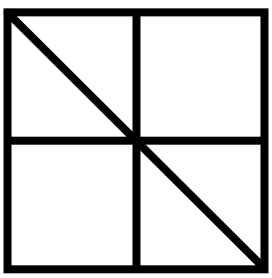
Draw the rectangle here.

Read the pictures

1	square
	rectangles
	triangles



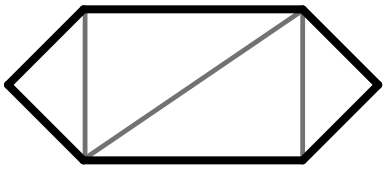
	squares
	rectangles
	triangles

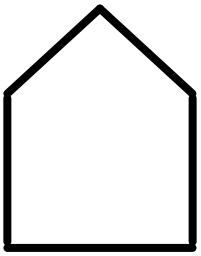


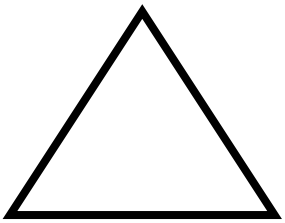
Draw

*Draw lines to make **four triangles** inside each shape.*

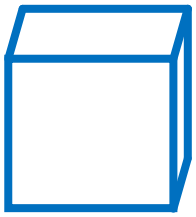
Example:



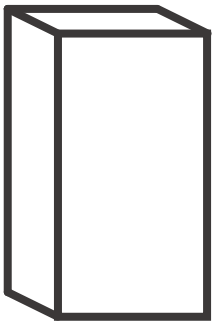




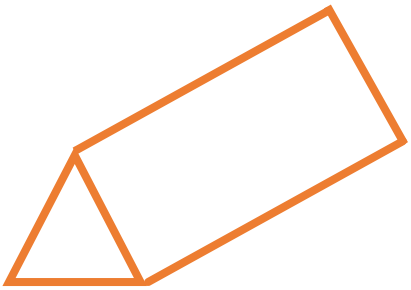
The same… different…



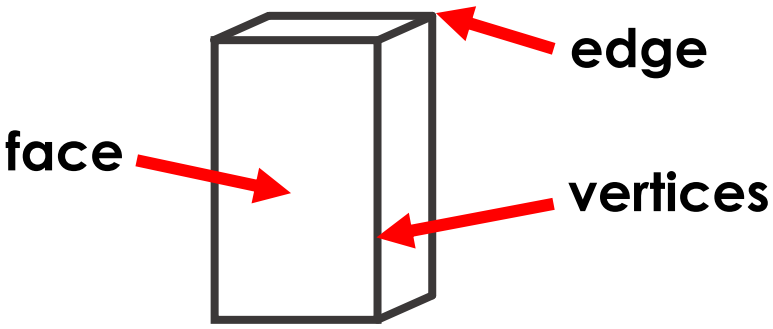
The same… different…



The same… different…

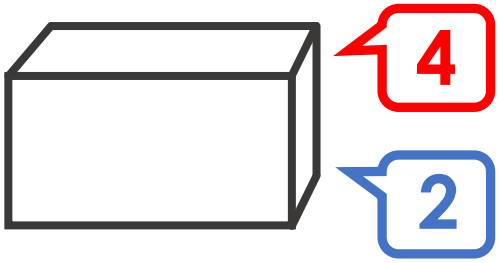


True or false? ✓ ✗

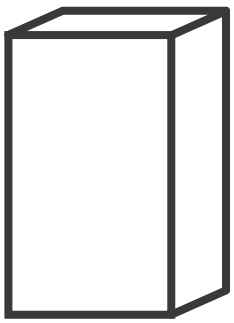


Which answer?

How many rectangles in a cuboid?



Fill the gaps



A cuboid is has:

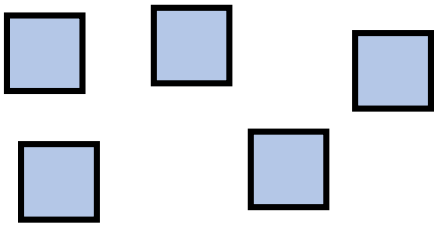
☐ square faces

☐ rectangular faces

Spot the mistakes

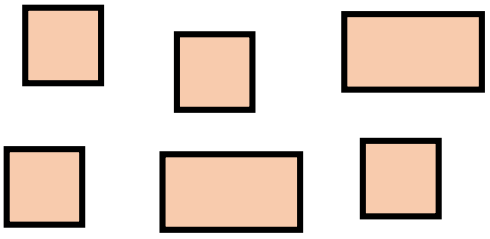
Mistake 1:

These shapes make a cube.



Mistake 2:

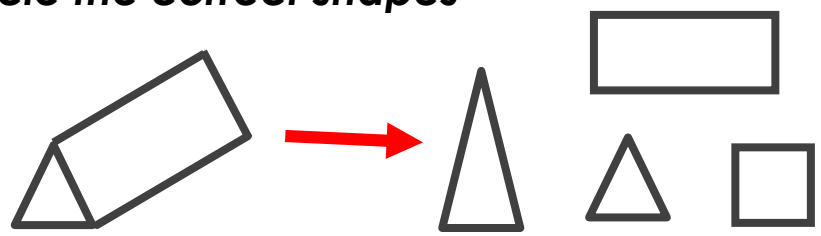
These shapes make a cube.



Read the picture

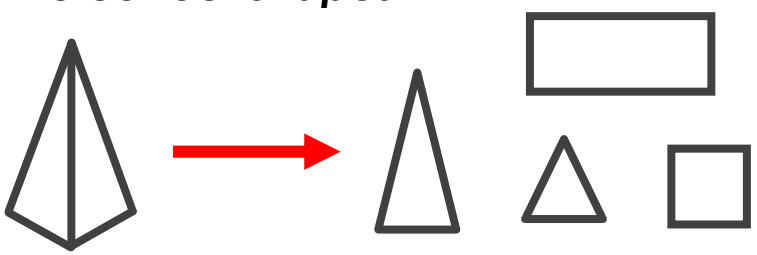
The triangular prism is made with…

Circle the correct shapes



The square-based pyramid is made with…

Circle the correct shapes



The same… different…

School Travel Report, Class 3

Coming to school	Going home from school
Walk: 𝍸 𝍸 𝍸	Walk: 𝍸 𝍸 |||
Bike: 𝍸 |	Bike: 𝍸 |
Car: 𝍸 ||||	Car: 𝍸 𝍸 |

Explain

Mrs Brown is counting how many days it rains this month.

Here is her tally chart so far:

𝍸 \|

Why is Mrs Brown using tally marks instead of numbers?

Mrs Brown is counting how many children on school dinners and how many on packed lunches.

Here is what she writes:

22 school dinners 8 packed lunches

Why is Mrs Brown using numbers instead of tally marks?

Which answer?

How many more children have school dinners than packed lunches?

School dinners	
Packed lunches	

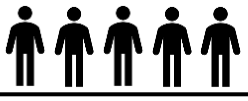
 = 5 children

2 more children

10 more children

Spot the difference

People in the park (winter)

Playground	
Field	
Bike track	

 = 2 people

People in the park (summer)

Playground	
Field	
Bike track	

 = 5 people

Explain what these pictograms show.

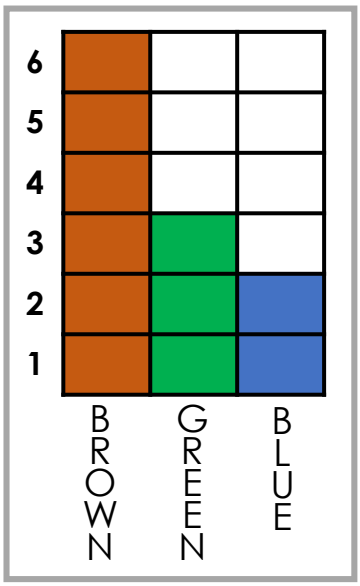
Which graph?

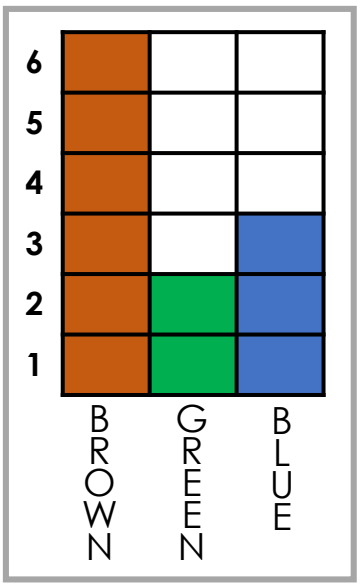
Eye Colour of Teachers

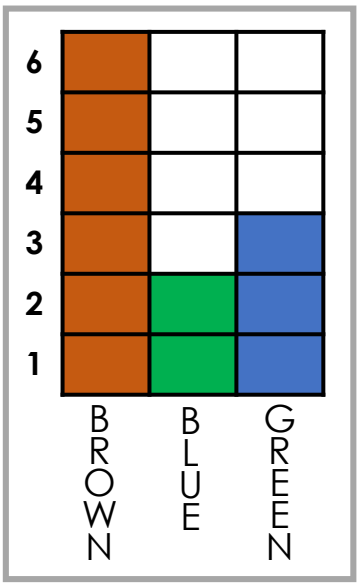
Brown	6 teachers
Green	2 teachers
Blue	3 teachers

Mr Harris found out the eye colours of all the teachers in the school.

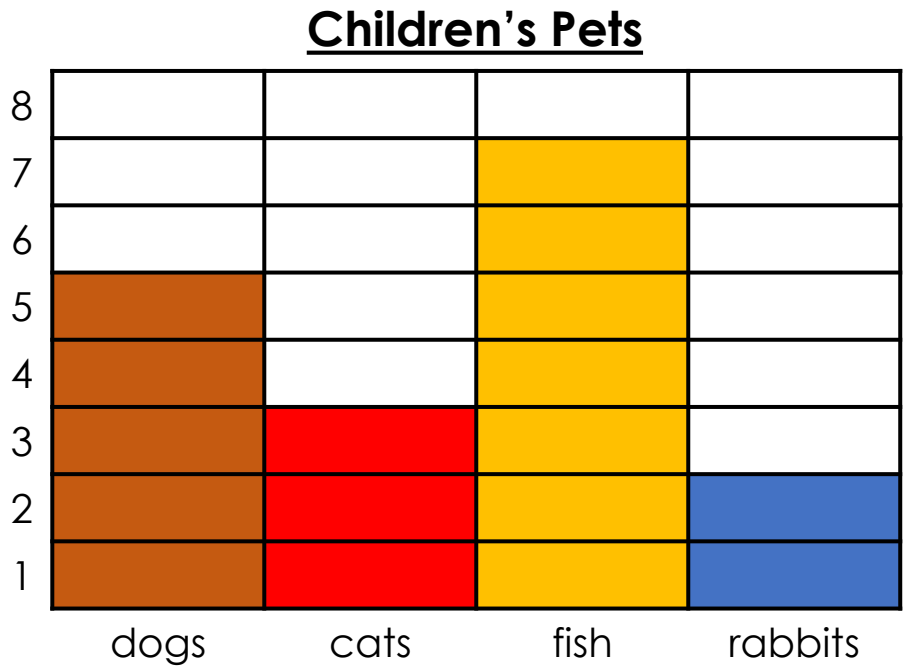
Look at the three graphs. Which graph show this information correctly?







Read the graph



There are **3** ____.

There are **2 more** ____ than ____.

There are less ____ than ____.

There are **5 less** ____ than ____.

Write your own sentence:

I SEE REASONING – KS1

Answers

Number and place value

Read the picture (p14 q2): 2 dominoes with 4 dots; 3 dominoes with 3 dots

Read the picture (p15 q2): 3 dominoes with 8 dots; 2 dominoes with 9 dots

Read the picture (p16 q1): 2 dominoes with more than 7 dots; 3 dominoes with less than 5 dots

Missing numbers (p22&p23): 38 and 74. Note that these two tasks are identical except the question on p23 includes the squares.

Different ways (p27 q1): Four ways (3 tens & 2 ones; 2 tens & 12 ones; 1 ten & 22 ones; 32 ones)

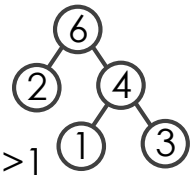
How many ways? (p27 q2): Three ways (2x10p & 4x1p; 10p & 14x1p; 24x1p)

Investigate (p27 q3): 13 and 8 gives the smallest difference

Addition

Digit cards game (p44 q2): Possible solutions: 6+4=10, 7+3=10, 8+2=10, 8+7=15, 9+6=15 (also, would you allow the use of 05 in the answer box?)

Digit cards game (p45): The smallest number in top circle is 6



Digit cards game (p46): Example solution: 8=6+2 3+4=7 5+9>1

Missing numbers (p47): Example solution: 1+6<9 7=4+3 2<5+8

Subtraction

Digit cards game (p61 q2): Possible solutions: 23-9=14, 23-4=19, 41-9=32, 41-2=39

Digit cards game (p62): Example solution: 10-8=2 5-4=1

Addition and subtraction

Different ways (p67 q3): Six ways (5+0=10-5, 5+1=10-4, 5+2=10-3, 5+3=10-2, 5+4=10-1, 5+5=10-0)

I SEE REASONING – KS1

Answers

Multiplication

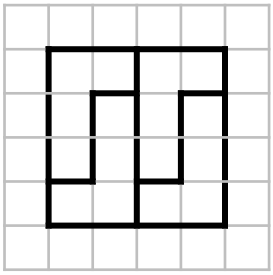
Digit cards game (p82 q2): Three ways, or using commutative facts six ways (2×5=10, 3×4=12, 4×5=20)

Multiplication and division

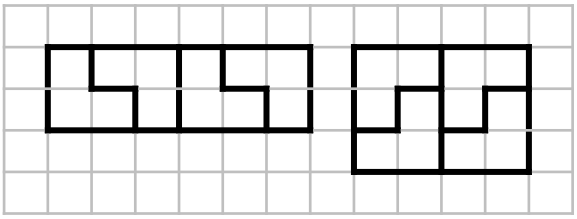
Read the pictures (p88 q2): 1st picture 2 dice hiding; 2nd picture 3 dice hiding; 3rd picture 6 dice hiding.

Fractions

Draw (p100 q1):



Draw (p100 q2):



Measurement

Predict and measure (p105 q1): All the lines are 5cm. The grey lines create an optical illusion making the lines appear shorter/longer.

I know… so… (p105 q2): 21 cubes.

Explain (p106 q2): 6 yellow blocks.

Measurement - money

Different ways (p113): 5p&1p 3×2p 2p+2p+1p+1p 4×1p+2p

Different ways (p114 q1): 2×10p 10p+5p+5p 4×5p 10p+5p+2p+2p+1p

How many ways? (p114 q2): 3 ways (50p+5p+2p+2p+1p; 4×10p+20p; 20p+20p+10p+5p+5p)

Measurement - time

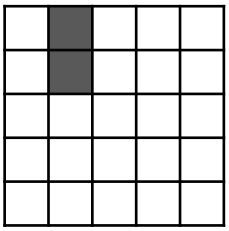
Missing hand (p120 q1&2): Note that the third hand is the minute hand.

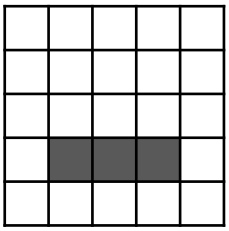
I SEE REASONING – KS1

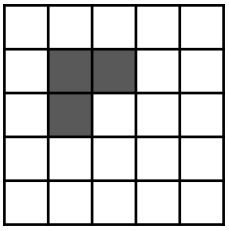
Answers

Geometry

Finish the patterns (p123 q2):

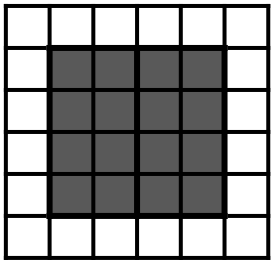
Red: 

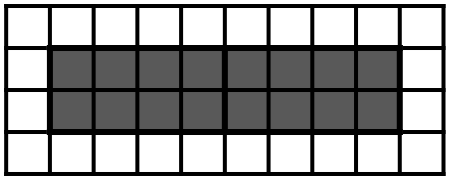
Blue: 

Orange: 

Geometry – 2D shape

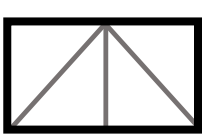
Draw (p128 q1):

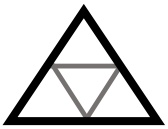




Read the pictures (p128 q2): Example 1: 2 rectangles (not including the square) and 5 triangles (4 right-angled triangles, 1 isosceles triangle). Example 2: 5 squares, 4 rectangles, 6 triangles (4 small, 2 big).

Draw (p129): Example ways:





Geometry – 3D shape

Fill the gaps (p131 q3): 2 square faces, 4 rectangular faces

Statistics

Explain (p133 q2): Tally marks are used to record a count over a period of time, numbers used to record a quantity in a one-off moment.

I SEE MATHS RESOURCES

A range of resources for developing deep, visual mathematics can be found at www.iseemaths.com including many free games suitable for children in KS1.

I See Reasoning – UKS2 provides a range of thought-provoking tasks and questions for children in Year 5&6.

I See Reasoning – LKS2 provides a range of thought-provoking tasks and questions for children in Year 3&4.

iPad apps I See + - and I See × ÷ allow teachers to create a range of visual representations, including bar models and 10-frames.

Information about other maths resources, conferences and in-school training led by Gareth Metcalfe can be found at www.iseemaths.com