

Checking Calculations

$$43 \times 6$$

The answer will be **odd/even**.

The answer will be a - digit number.

Of these numbers, the answer will be closest to:

90

180

270

360

Dividing the answer by makes

Checking Calculations

$$15 \times 9$$

The answer will be **odd/even**.

The answer will be a - digit number.

Of these numbers, the answer will be closest to:

80

95

110

140

Dividing the answer by makes

Explain the Mistakes

$$\begin{array}{r} 43 \\ \times 6 \\ \hline 2418 \\ \hline \end{array}$$

$$\begin{array}{r} 15 \\ \times 9 \\ \hline 95 \\ \hline 4 \end{array}$$

Part-Complete Examples

$$\begin{array}{r} 43 \\ \times 6 \\ \hline 8 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 15 \\ \times 9 \\ \hline 5 \\ \hline 4 \end{array}$$

Different Methods

Two ways of calculating 42×8 :

What's the same? What's different?

40	2	320
8	320	+ 16
	16	<u>336</u>

42
× 8
<u>336</u>
1

Steps to understand short multiplication

Part-complete examples

$$\begin{array}{r} 66 \\ \times 5 \\ \hline 0 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 47 \\ \times 3 \\ \hline 1 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 57 \\ \times 3 \\ \hline \\ \hline \end{array}$$

Checking calculations

$$23 \times 4$$

The answer will be **odd/even**.

The answer will be a - digit number.

Dividing the answer by makes

Spot the mistake:

$$\begin{array}{r} 23 \\ \times 4 \\ \hline 82 \\ \hline 1 \end{array}$$

Circle the incorrect part

Checking calculations

$$45 \times 5$$

The answer will be **odd/even**.

Of these numbers, the answer will be closest to:

175

215

275

325

Dividing the answer by makes

Spot the mistake:

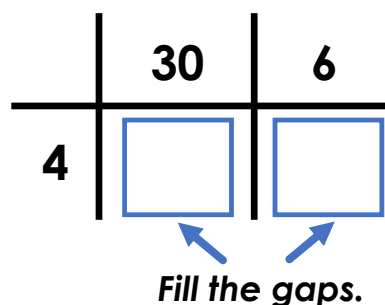
$$\begin{array}{r} 45 \\ \times 5 \\ \hline 220 \\ \hline 2 \end{array}$$

Circle the incorrect part

Different methods

36×4 using the **short method**.

$$\begin{array}{r} 36 \\ \times 4 \\ \hline 144 \\ \hline 2 \end{array}$$



36×4 using the **grid method**.

Checking Calculations

$$29 \times 27$$

The answer will be **odd/even**.

$$25 \times 25 = 625 \quad 30 \times 30 = 900$$

Estimation for 29×27 is

Checking Calculations

$$76 \times 57$$

The answer will be **odd/even**.

$$70 \times 50 = 3500 \quad 80 \times 60 = 4800$$

Estimation for 76×57 is

Checking Calculations

Answer this question **without calculating**.

Which numbers **cannot** be the answer to 39×38 ?

1602

1482

1543

Explain how you know.

Different Methods

	50	2	2000
			150
40	2000	80	80
			+
3	150	6	6
			<u>2236</u>

$$\begin{array}{r}
 52 \\
 \times 43 \\
 \hline
 156 \\
 2080 \\
 \hline
 2236 \\
 1
 \end{array}$$

$$\begin{array}{r}
 52 \\
 \times 43 \\
 \hline
 156 \\
 2080 \\
 \hline
 2236 \\
 1
 \end{array}$$

What is **the same**?

What is **different**?

Explain the Mistakes

$$\begin{array}{r}
 72 \\
 \times 43 \\
 \hline
 216 \\
 288 \\
 \hline
 404
 \end{array}$$

$$\begin{array}{r}
 84 \\
 \times 52 \\
 \hline
 168 \\
 40200 \\
 \hline
 40368
 \end{array}$$

Part-Complete Examples

$$\begin{array}{r}
 63 \\
 \times 53 \\
 \hline
 189 \\
 \square \square 50 \\
 1 \\
 \hline
 \square \square \square 9
 \end{array}$$

$$\begin{array}{r}
 24 \\
 \times 16 \\
 \hline
 \square \square 4 \\
 2 \\
 24 \square \\
 \hline
 \square \square \square
 \end{array}$$

$$\begin{array}{r}
 81 \\
 \times 46 \\
 \hline
 486 \\
 \square \square \square \square \\
 \hline
 3 \square \square \square
 \end{array}$$

Steps to understand long multiplication

Checking calculations

$$63 \times 53$$

The answer will be **odd/even**.

$$60 \times 50 = 3000 \quad 70 \times 60 = 4200$$

Estimation for 63×53 is

Spot the mistake:

$$\begin{array}{r} 63 \\ \times 53 \\ \hline 159 \\ 315 \\ \hline 474 \end{array}$$

Circle the incorrect part

Different methods

Fill the gaps.

48×42 using the **grid method**:

	40	8	1	6	0	0
40	1600	320		3	2	0
2	80	16			8	0
				+	1	6
			<input type="text"/>	<input type="text"/>	<input type="text"/>	6

48×42 using the **long method**:

$$\begin{array}{r} 48 \\ \times 42 \\ \hline \quad \square 6 \\ \square \square \square 0 \\ \hline \square \square \square 6 \end{array}$$

Part-complete examples:

$$\begin{array}{r} 63 \\ \times 31 \\ \hline 6 \square \\ \square \square 9 \square \\ \hline \square \square 5 \square \end{array}$$

$$\begin{array}{r} 28 \\ \times 24 \\ \hline \square \square 2 \\ \quad 3 \\ \square \square \square \\ \hline \square \square \square \end{array}$$

$$\begin{array}{r} 86 \\ \times 41 \\ \hline \square 6 \\ 3 \square \square 0 \\ \hline \square \square \square 6 \end{array}$$

Checking Calculations

$$502 \div 15$$

Will the answer be a whole number?

Yes

Possibly

No

$$450 \div 15 = 30 \quad 600 \div 15 = 40$$

Estimation for $502 \div 15$ is

Multiplying the answer by **15** makes

Checking Calculations

$$428 \div 24$$

Will the answer be a whole number?

Yes

Possibly

No

$$240 \div 24 = 10 \quad 480 \div 24 = 20$$

Estimation for $428 \div 24$ is

Multiplying the answer by **24** makes

How many digits?

For this task, **do not** work out the answers to the questions.

For each question, the answer has **how many digits?**

$$615 \div 5$$

- digit(s)

$$744 \div 8$$

- digit(s)

$$156 \div 12$$

- digit(s)

$$135 \div 15$$

- digit(s)

How many digits?

For this task, **do not** work out the answers to the questions.

For each question, the answer has **how many digits?**

$$304 \div 38$$

- digit(s)

$$312 \div 26$$

- digit(s)

$$1908 \div 18$$

- digit(s)

$$1372 \div 14$$

- digit(s)

Written or Mental Method?

$$176 \div 16$$

$$1640 \div 10$$

$$74 \div 8$$

$$85 \div 5$$

$$192 \div 12$$

$$300 \div 20$$

Written or Mental Method?

$$144 \div 16$$

$$516 \div 12$$

$$140 \div 14$$

$$3000 \div 50$$

$$280 \div 24$$

$$1000 \div 15$$

Next Step

$420 \div 15$

$$15 \overline{)420}$$

Next Step A:

$$\begin{array}{r} 15 \overline{)420} \\ \underline{150} \quad 15 \times 10 \\ 270 \end{array}$$

Next Step B:

$$\begin{array}{r} 15 \overline{)420} \\ \underline{300} \quad 15 \times 20 \\ 120 \end{array}$$

Next Step C:

$$\begin{array}{r} 15 \overline{)420} \\ \underline{450} \quad 15 \times 30 \\ 30 \end{array}$$

What is the best next step?

Explain the mistakes.

Next Step

$298 \div 12$

$$\begin{array}{r} 12 \overline{)298} \\ \underline{240} \quad 12 \times 20 \\ 58 \end{array}$$

Next Step A:

$$\begin{array}{r} 12 \overline{)298} \\ \underline{240} \quad 12 \times 20 \\ 58 \\ \underline{36} \quad 12 \times 3 \\ 22 \end{array}$$

Next Step B:

$$\begin{array}{r} 12 \overline{)298} \\ \underline{240} \quad 12 \times 20 \\ 58 \\ \underline{60} \quad 12 \times 5 \\ 2 \end{array}$$

Next Step C:

$$\begin{array}{r} 12 \overline{)298} \\ \underline{240} \quad 12 \times 20 \\ 58 \\ \underline{48} \quad 12 \times 4 \\ 10 \end{array}$$

What is the best next step?

Explain the mistakes.

Which answer?

$$476 \div 14 \quad 14 \overline{) 476}$$

$$\begin{array}{r} 420 \\ \hline 56 \\ 56 \\ \hline 0 \end{array} \quad \begin{array}{l} 14 \times 30 \\ \\ 14 \times 4 \end{array}$$

Answers:

- (a) 34
- (b) 28
- (c) 304

Which answer?

$$760 \div 16 \quad 16 \overline{) 760}$$

$$\begin{array}{r} 640 \\ \hline 120 \\ 112 \\ \hline 8 \end{array} \quad \begin{array}{l} 16 \times 40 \\ \\ 16 \times 7 \end{array}$$

Answers:

- (a) 32
- (b) 47.8
- (c) $47\frac{1}{2}$

Part-Complete Examples

$$510 \div 15$$

$$15 \overline{) 510}$$

$$\begin{array}{r} 450 \\ \hline \end{array} \quad 15 \times 30$$

$$540 \div 12$$

$$12 \overline{) 558}$$

$$\begin{array}{r} 480 \\ \hline \end{array} \quad 12 \times$$

Steps to understand long division

What's the answer?

$768 \div 24 =$

$$\begin{array}{r} 24 \overline{) 768} \\ \underline{720} \quad 24 \times 30 \\ 48 \\ \underline{48} \quad 24 \times 2 \\ 0 \end{array}$$

$760 \div 16 =$

$$\begin{array}{r} 16 \overline{) 760} \\ \underline{640} \quad 16 \times 40 \\ 120 \\ \underline{112} \quad 16 \times 7 \\ 8 \end{array}$$

Part-Complete Examples:

1	2	3	5	4													
		2	4	0	1	2	*										

1	5	8	1	1											
					1	5	*	5	0						

Checking calculations

$255 \div 15 =$

Will the answer be a whole number?

Yes Possibly No

$150 \div 15 = 10 \qquad 300 \div 15 = 20$

Estimation for $255 \div 15$ is

Multiplying the answer by 15 makes

Spot the mistake:

$$\begin{array}{r} 23 \\ 15 \overline{) 255} \\ \underline{300} \quad 15 \times 20 \\ 45 \\ \underline{45} \quad 15 \times 3 \\ 0 \end{array}$$