

Have a go at these arithmetic calculations.

1. $2,452 + 573 =$

2. $30,000 - 700 =$

3. $5 \times 6 \times 2 =$

4. $720 \div 9 =$

Complete as many of these as you can in 3 minutes:

1. $157.5 - 38.69 =$

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1 mark

2. $\underline{\hspace{2cm}} = \frac{7}{8} \times 6$

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1 mark

3. The numbers in this sequence increase by the same amount each time. **Write the two missing numbers.**

320

360

400



Lesson 12

Learning Question:

Can I apply what I have learnt to solve calculations?

Success Criteria:

- Read the calculation
- Check the operation you need to use
- Solve the calculation
- Check your answer

Vocabulary

Calculation

Calculate

Number sentence

Sign

Operation

Symbol

Inverse

Equation

Division

Divided by

Share



Personal Target: What are you going to focus on today?

We are going to do a little bit of practise with dividing and revising the strategies we can use to solve division calculations.

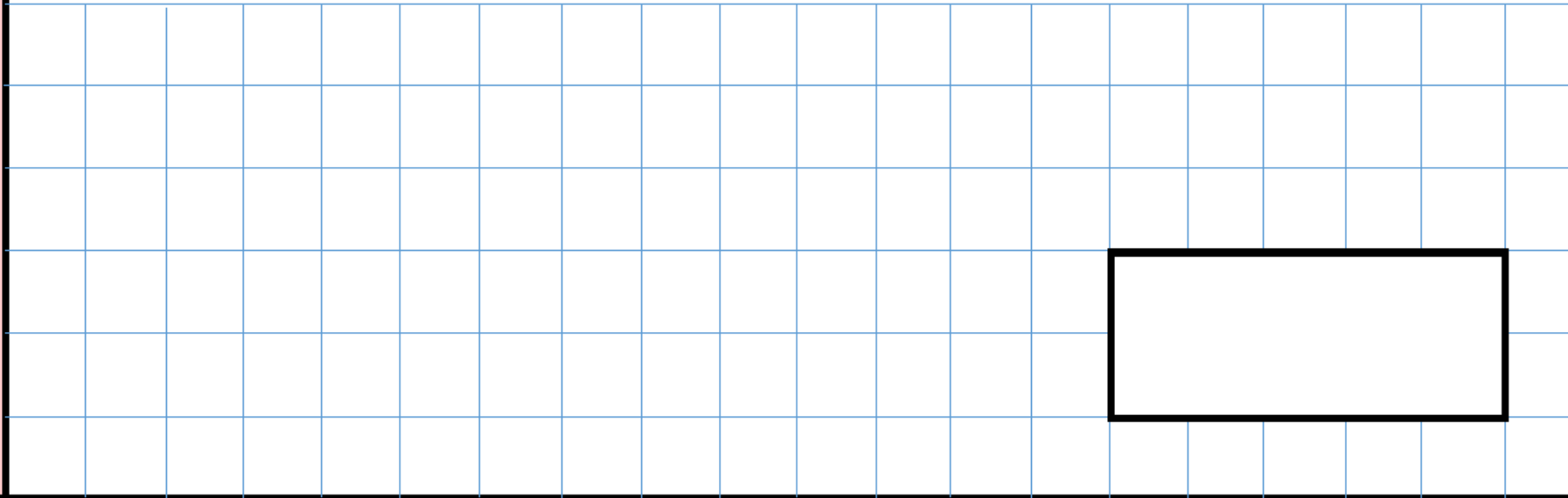
Have a go at the questions on the following pages. Check the clue to help you choose the correct strategy.

The strategy and answer for each question will appear on the next page to the question.

Clue: Try using the inverse for this question.

$$? \times 7 = 42$$

$$42 \div 7 =$$



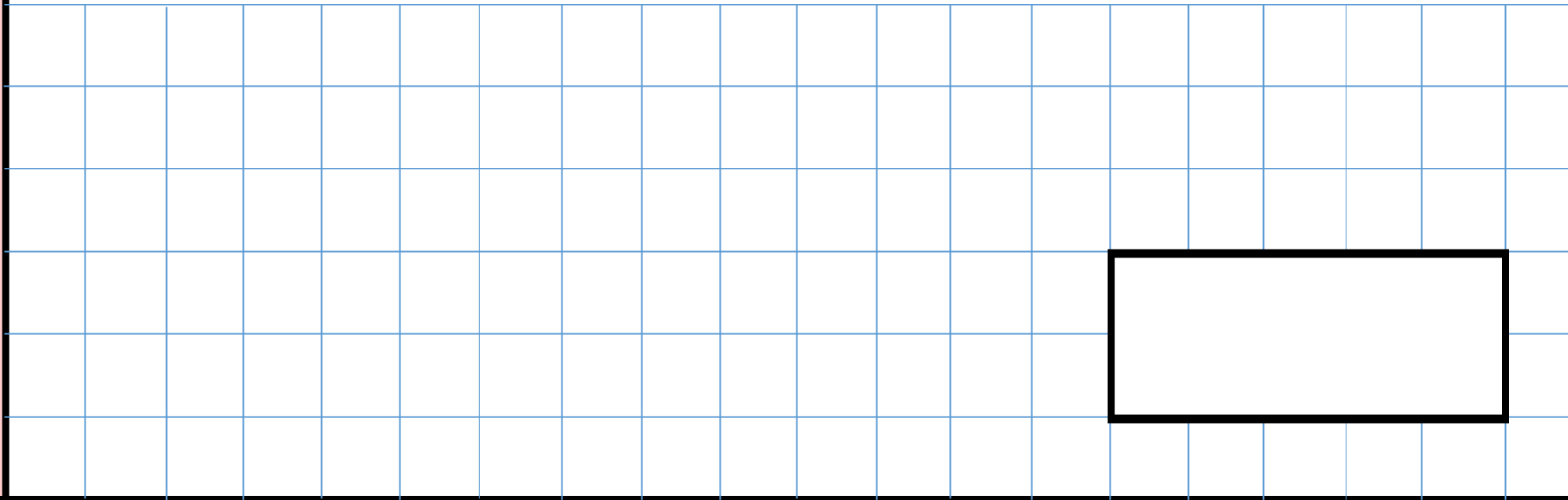
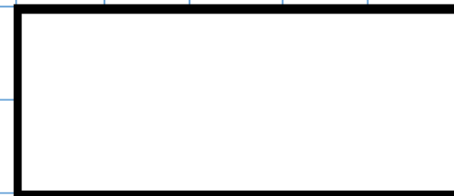
1 mark

$$42 \div 7$$

- Use the inverse (x)
- 7 times table knowledge: $7 \times \text{what} = 42?$
 - $7 \times 6 = 42$
- Therefore, $42 \div 7 = 6$

Clue: Imagine that 480 was 48, solve that calculation and then multiply the answer by 10. This may make things less scary!

$$480 \div 8 =$$

A large grid of 20 columns and 10 rows, intended for students to show their working out for the division problem.A rectangular box with a black border, intended for the student to write the final answer to the calculation.A small square box with a black border, intended for the student to indicate the mark value for this question.

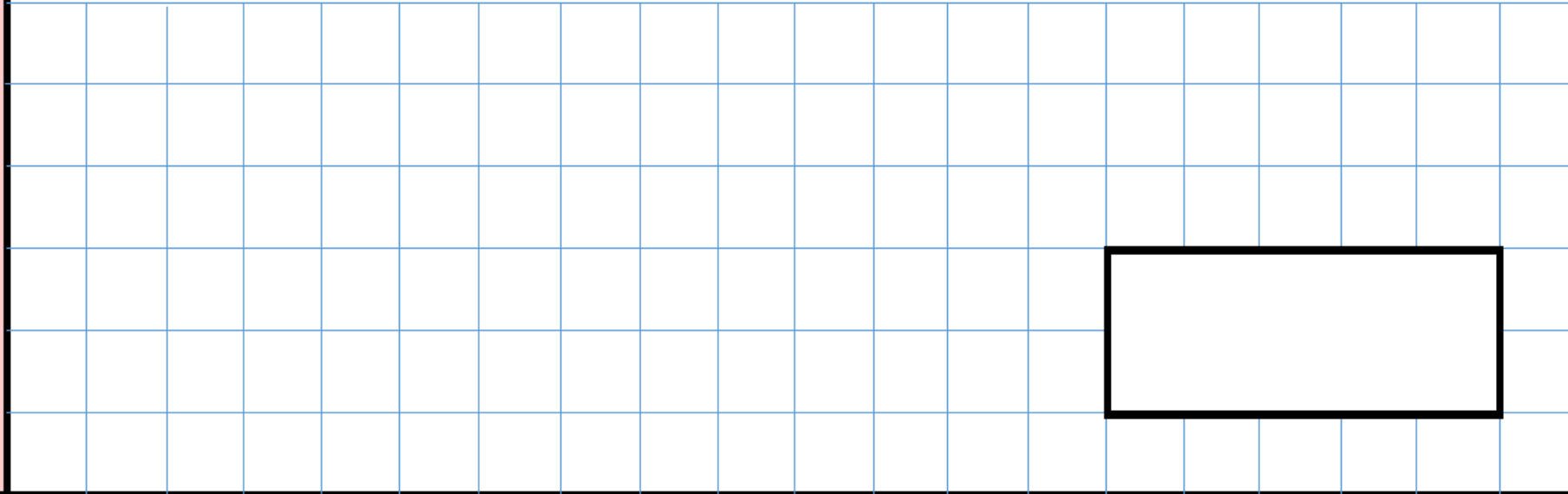
1 mark

$$480 \div 8$$

- Ignore the 0 and work out $48 \div 8 = 6$
 - Now remember the 0.
 - $48 \times 10 = 480$
- Multiply your answer of 6 by 10
 - Therefore, $480 \div 8 = 60$

Clue: You need to use long division for this question.

$$1275 \div 15 =$$

A large grid of 20 columns and 10 rows, intended for working out the long division. The grid is currently empty.A rectangular box with a black border, intended for the student to write the final answer to the division problem.A small square box with a black border, intended for the student to indicate the mark value for this question.

1 mark

1275 ÷ 15

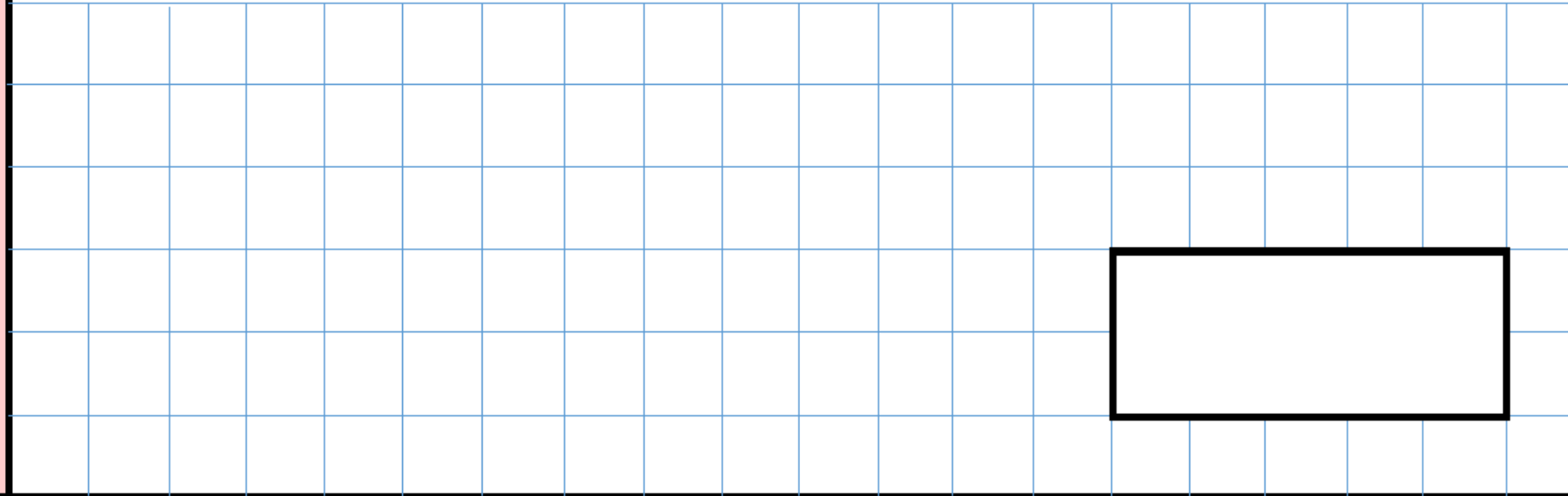
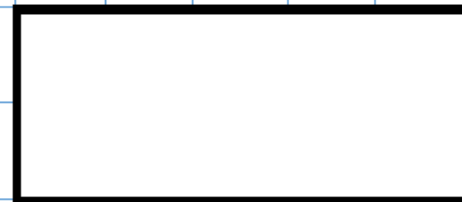
1	X	15	=	15
2	X	15	=	30
3	X	15	=	45
4	X	15	=	60
5	X	15	=	75
6	X	15	=	90
7	X	15	=	105
8	X	15	=	120
9	X	15	=	135

$$\begin{array}{r} 0085 \\ 15 \overline{) 1275} \\ \underline{- 120} \\ 0075 \end{array}$$

- You need to use long division to solve this question.
- First work out the 15 x table up to 9 x (if you need to go that far)
- How many times does 15 go into 1 = 0
- Put 0 above the 1 in the answer
- How many times does 15 go into 12 = 0
- Put a 0 above the 2 in the answer
- How many times does 15 go into 127?
- Look at your 15 times table. $8 \times 15 = 120$. $9 \times 15 = 135$ so this is too much.
- Put 8 above the 7 in the answer
- Subtract 120 from 127
- Bring down the 5 from 1275 and put next to the 7
- How many times does 15 go into 75?
- Check your 15 times table: $75 \div 15 = 5$
- Put 5 next to the 8 in the answer
- If there are no remainders then you have finished.
- If you still have remainders, repeat previous steps.

Clue: Use the 'bus stop method' to help you here. Do you know your 5 times table?

$$6,970 \div 5 =$$

A large grid for working out the division problem. The grid is 18 columns wide and 10 rows high. The first row is partially filled with the equation $6,970 \div 5 =$. The rest of the grid is empty.A rectangular box for the answer, located on the right side of the grid. It is 8 columns wide and 3 rows high.A square box for the mark, located in the bottom right corner of the page. It is 4 columns wide and 4 rows high.

1 mark

$$6970 \div 5$$

$$\begin{array}{r} 1390 \\ 5 \overline{) 6970} \\ \underline{5} \\ 19 \\ \underline{15} \\ 47 \\ \underline{45} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

- You can use short division to solve this question.
- How many times does 5 go into 6 = 1 with 1 left over
- Put 1 above the 6 in the answer
- Carry the remainder of 1 over to the 9 to make 19
- How many times does 5 go into 19? 3 times with a remainder of 4
- Put 3 above the 9 in the answer
- Carry the remainder of 4 over to the 7 to make 47
- How many times does 5 go into 47? 9 times with a remainder of 2
- Put 9 above the 7 in the answer
- Carry the remainder of 2 over to the 0 to make 20.
- How many times does 5 go into 20? 4 times with no remainder.
- Put 4 above the 0 in the answer.
- If there are no remainders then you have finished.

9810 ÷ 15

1	X	15	=	15
2	X	15	=	30
3	X	15	=	45
4	X	15	=	60
5	X	15	=	75
6	X	15	=	90
7	X	15	=	105
8	X	15	=	120
9	X	15	=	135

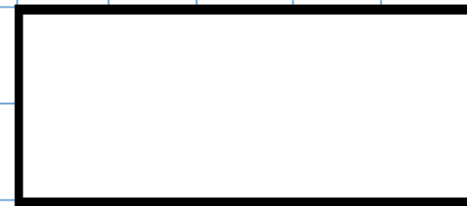
$$\begin{array}{r} 0654 \\ 15 \overline{) 9810} \\ \underline{- 90} \\ 081 \\ \underline{- 75} \\ 60 \end{array}$$

Diagram illustrating the long division process for 9810 ÷ 15. The quotient is 0654. The steps are: 15 goes into 9 zero times, into 98 six times (90), into 81 five times (75), and into 60 four times (60). Green arrows indicate the bringing down of digits: from 98 to 81, and from 81 to 60.

- You need to use long division to solve this question.
- First work out the 15 x table up to 9 x (if you need to go that far)
- How many times does 15 go into 9 = 0
- Put 0 above the 9 in the answer
- How many times does 15 go into 98?
- Look at your 15 times table. 6 x 15 = 90. 7 x 15 = 105 so this is too much.
- Put a 6 above the 8 in the answer
- Subtract 90 from 98
- Bring down the 1 from 9810 and put next to the 8
- How many times does 15 go into 81?
- Check your 15 times table: 5 x 15 = 75
- Put 5 next to the 6 in the answer
- Subtract 75 from 81.
- Bring down the 0 from 9810
- How many times does 15 go into 60? 4
- Put a 4 above the 0 in answer.
- No remainders so finished.

Clue: Are we dividing or are we using our inverse and multiplying here?

$$\frac{1}{4} \div 2 =$$



1 mark

$$\frac{1}{4} \div 2$$

$$\frac{1}{4} \div 2 = \frac{1}{4} \div \frac{2}{1}$$

$$\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$$

- The whole number 2 can be written as a fraction: $\frac{2}{1}$
- When dividing fractions, remember the letters KCF: *Keep, Change, Flip*.
- *Keep* the first fraction the same.
- *Change* \div to \times
- *Flip* the second fraction.
- Multiply the numerators and the denominators.

Clue: Use long division to solve this calculation.

A grid for long division. The number 419143 is written in the top row, with a vertical bar between 1 and 9. The grid is 10 columns wide and 10 rows high. A pink vertical bar is on the left side. A pink vertical bar is on the right side. A white box with a black border is located in the bottom right area of the grid, intended for the answer. Below the box, the text "2 marks" is written.

4 1 | 9 1 4 3



2 marks

9143 ÷ 41

- 1 X 41 = 41
- 2 X 41 = 82
- 3 X 41 = 123
- 4 X 41 = 164
- 5 X 41 = 205

$$\begin{array}{r} 0223 \\ 41 \overline{) 9143} \\ \underline{82} \\ 094 \\ \underline{82} \\ 123 \end{array}$$

The diagram shows the long division process for 9143 ÷ 41. The quotient is 0223. The first step shows 41 dividing 91, with 2 as the quotient digit and 82 as the product. The second step shows 41 dividing 94, with 2 as the quotient digit and 82 as the product. The final remainder is 123. Green arrows indicate the downward movement of the digits from the dividend to the next step.

- You need to use long division to solve this question.
- First work out the 41 x table up to 9 x (if you need to go that far – in this case I am first going up to 5 x 41)
- How many times does 41 go into 9 = 0
- Put 0 above the 9 in the answer
- How many times does 41 go into 91?
- Look at your 41 times table. 2 x 41 = 82. 3 x 41 = 123 so this is too much.
- Put a 2 above the 1 in the answer
- Subtract 82 from 91
- Bring down the 4 from 9143 and put next to the 9
- How many times does 41 go into 94?
- Check your 41 times table: 2 x 41 = 82
- Put 2 next to the 2 in the answer
- Subtract 82 from 94.
- Bring down the 3 from 9143
- How many times does 41 go into 123? 3
- Put a 3 above the 3 in answer.
- No remainders so finished.

Clue: Remember KCF!

$$\frac{6}{8} \div 2 =$$

A large grid of 20 columns and 10 rows, intended for students to show their working out for the division problem. The grid is currently empty.

A rectangular box with a black border, intended for the student to write the final answer to the problem.

A small square box with a black border, intended for the student to indicate the mark value for this question.

1 mark

$$\frac{6}{8} \div 2$$

$$\frac{6}{8} \div 2 = \frac{6}{8} \div \frac{2}{1}$$

$$\frac{6}{8} \times \frac{1}{2} = \frac{6}{16} = \frac{3}{8}$$

- The whole number 2 can be written as a fraction: $\frac{2}{1}$
- When dividing fractions, remember the letters KCF: *Keep, Change, Flip*.
- *Keep* the first fraction the same.
- *Change* \div to \times
- *Flip* the second fraction.
- Multiply the numerators and the denominators.
- Simplify the answer if necessary.

Your task:

Complete the questions on the worksheet.

Plenary:

Create 5 division questions (with answers) and send them to your teacher so they can include them in future tests!

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