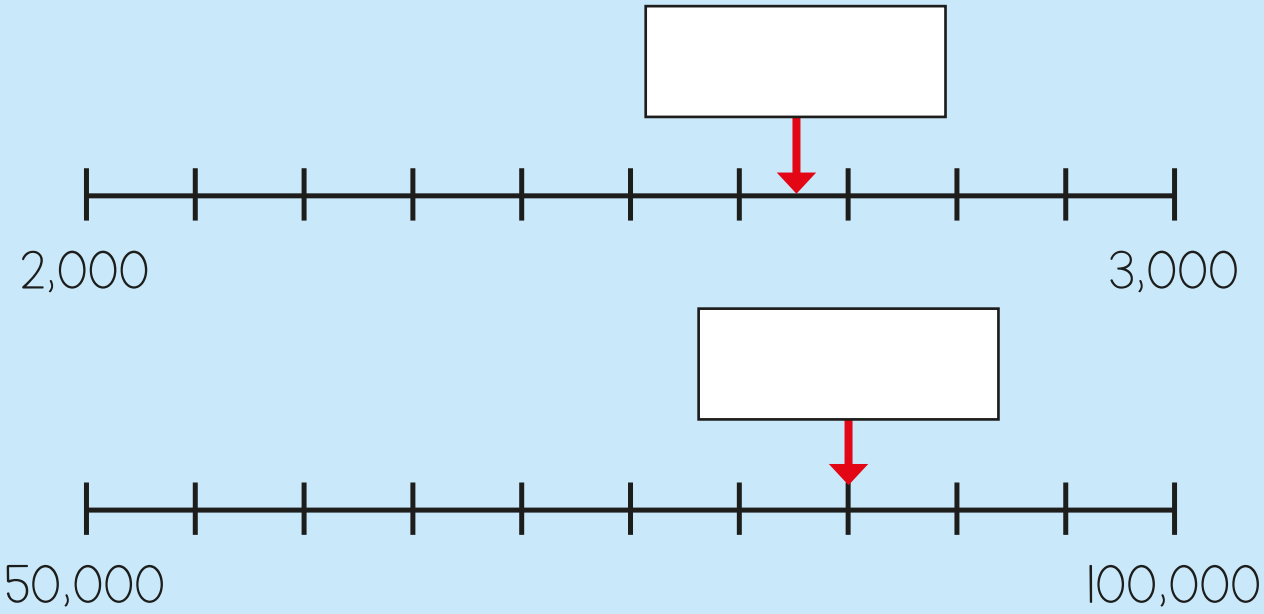
# 6 PLACE VALUE

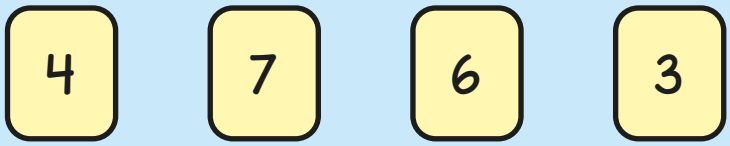
From White Rose Maths schemes for Year 6 Autumn Term

**BLOCK 1 - PLACE VALUE**

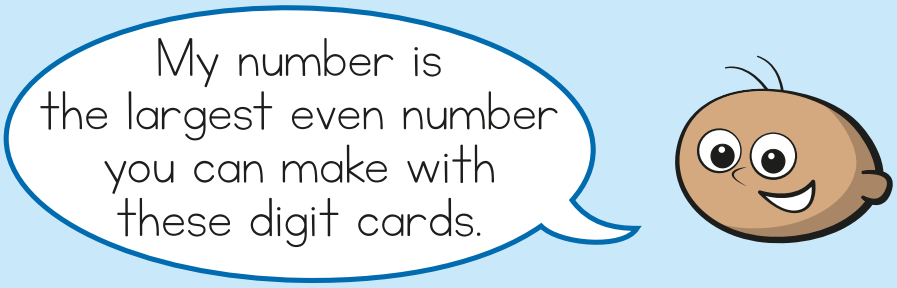
1 What numbers are the arrows pointing to?




2 Here are some digit cards.




Tommy uses 3 of the cards to make a 3-digit number.




What is Tommy's number?

**3** Fill in the missing numbers.

5,703 = 5,000 + 700 + ☐

231,094 = 200,000 + 30,000 + ☐ + 90 + 4

☐ = 4,000 + 800 + 5

**4** The lengths of four rivers are shown in the table.

| River | Length (km) |
|---|---|
| Mississippi | 5,495 |
| Saint Lawrence | 2,938 |
| Nile | 5,831 |
| Rio Grande | 2,983 |

Round the length of the Mississippi to the nearest 100 km.

☐

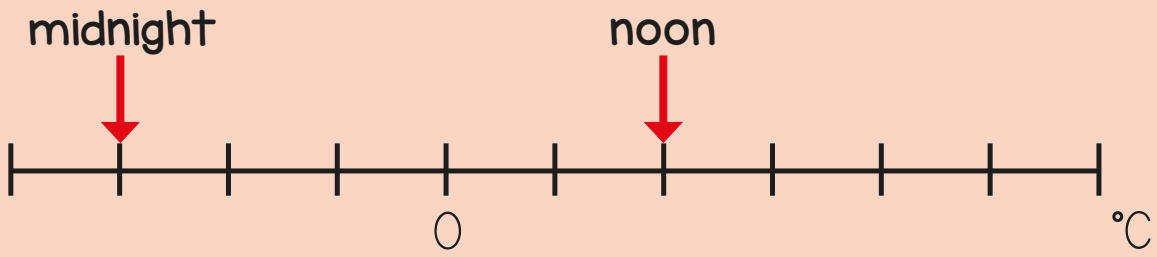
Round the length of the Nile to the nearest 10 km.

☐

Put the rivers in order of their length starting with the shortest.

5 The number line shows the temperature of a town at midnight and noon.

The difference between the temperatures is 10 °C.




What is the temperature at midnight?

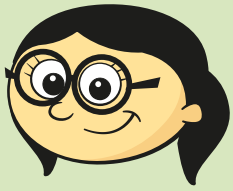
Explain your reasons.

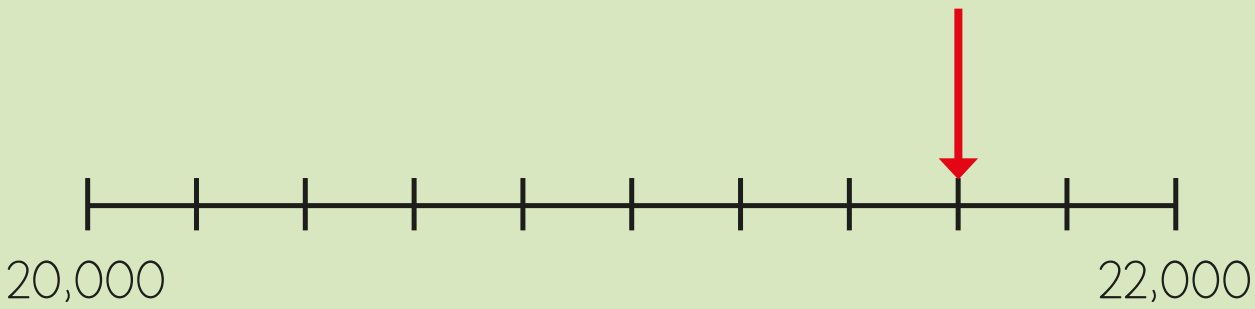
**6** Some digit cards have been placed in a statement.


Use each of these cards once to make the statement correct.


Arrange all six cards to make a number between 635,000 and 670,000


**7** Annie marks a number on the number line.






Draw an arrow to show 100 more than Annie's number.

**8** Here is part of a number sequence.

The sequence increases by 50 each time.

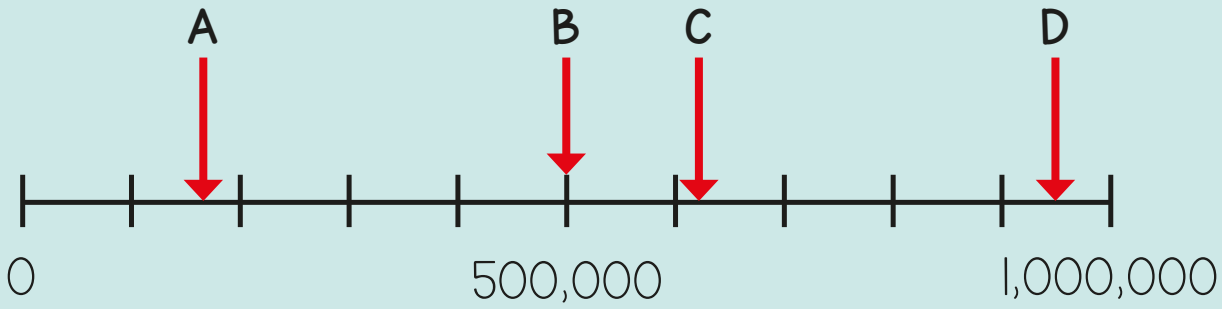
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5,200 | 5,250 | A | B | C | D | E | F | G |

Which box will have the first number greater than 5,400?

**9** What is the **smallest** digit that can be used to make this statement correct?

$$25{,}2\_\_8 > 25{,}289$$

10 Some numbers are marked on a number line.




Which numbers round to 1 million to the nearest million?

_____

Which number rounds to 600,000 to the nearest thousand?

_____

11 What is 21 ones + 21 tens?

# Answers


1. 2,650
   85,000

2. 764

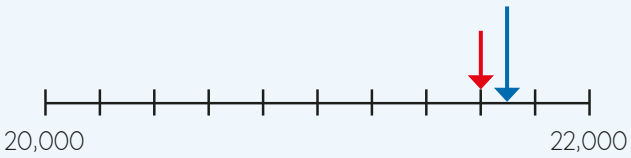
3. 5,703 = 5,000 + 700 + **3**
   231,094 = 200,000 + 30,000 + **1,000** + 90 + 4
   **4,805** = 4,000 + 800 + 5

4. 5,500 km  5830 km
   Saint Lawrence, Rio Grande, Mississippi, Nile

5. −6 °C

6. **7**02 > 6**36**  **7**02 > 6**63**

| | | | | | |
|---|---|---|---|---|---|
| 636,027 | 636,072 | 636,207 | 636,270 | 636,702 | 636,720 |
| 637,026 | 637,062 | 637,206 | 637,260 | 637,602 | 637,620 |
| 663,027 | 663,072 | 663,207 | 663,270 | 663,702 | 663,720 |

7. 


8. D

9. 25,2**9**8 > 25,28**9**

10. B, C, D
    C

11. 231

# 6 FOUR OPERATIONS (A)

From White Rose Maths schemes for Year 6 Autumn Term

**BLOCK 2 - FOUR OPERATIONS (A)**

1 Work out the calculations.

3,690 + 649

10,000 − 3,284

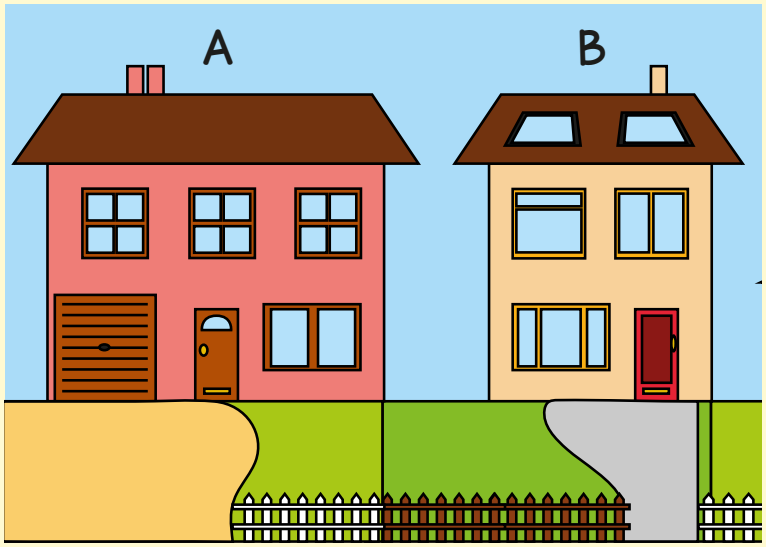
5,814 × 8

332 ÷ 4

**2** Fill in the missing digits.

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 2 | | 6 | 3 | |
| | + | | 1 | 6 | | |
| | | 9 | 7 | 2 | 8 | |

**3**

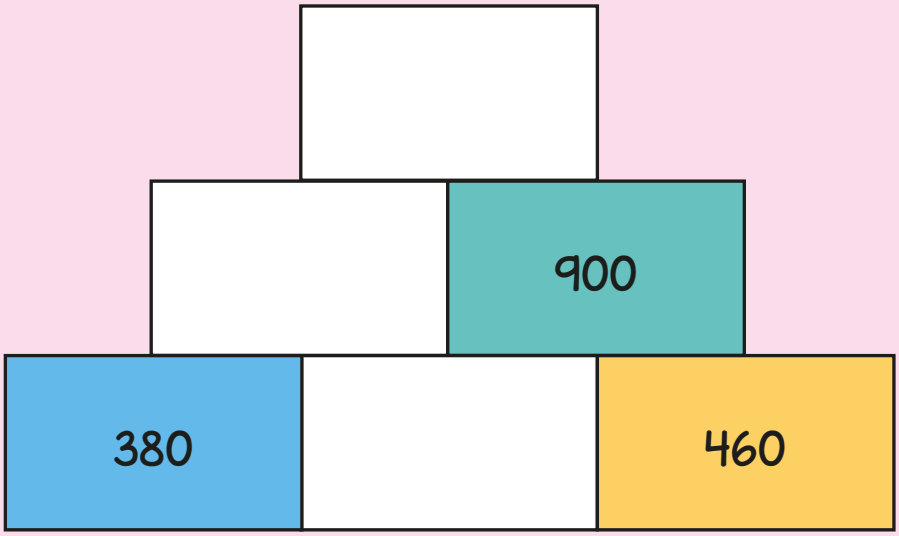



House A is worth £682,000

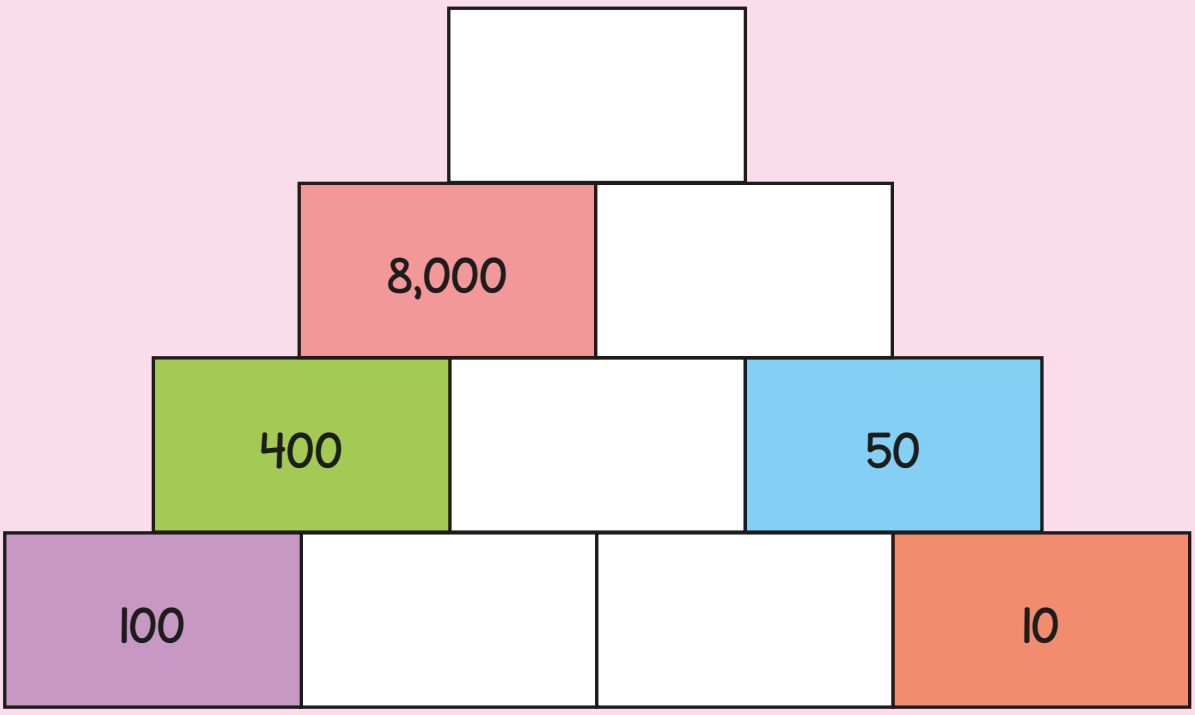
House B is worth £135,000 less than House A.

How much is House B worth?

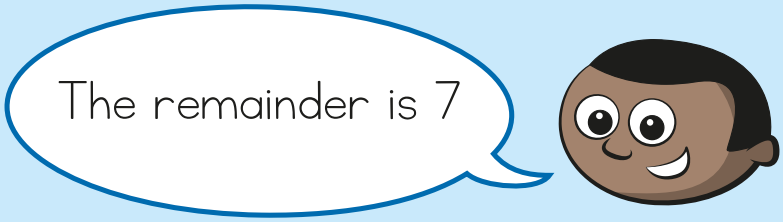
4 Complete the addition pyramid.




Complete the multiplication pyramid.



**5** Mo completes the calculation 247 ÷ 6




Explain how you know that Mo is incorrect.

**6** Pencils are put into packs of 24

There are 3,712 pencils.

How many full packs of pencils can be made?

How many more pencils are needed to make another full pack?

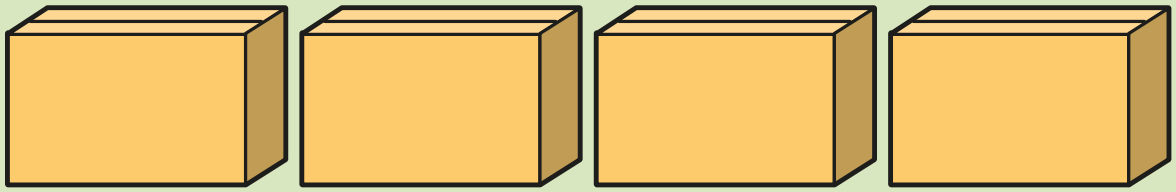
**7** Complete the calculations.

$8 \times 3 = 4 \times \square$

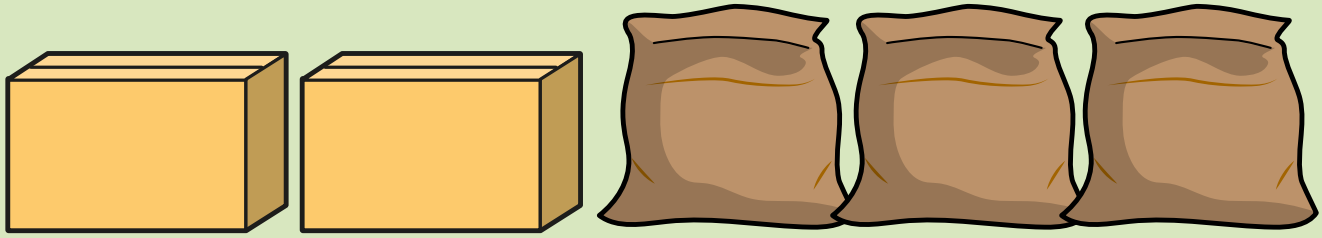
$\square \div 6 = 468 \div 12$

**8** There are 5 times as many pens in box A as in box B.
Teddy moves 82 pens from box A to box B.
Both boxes now have the same number of pens.
How many pens are in box A now?

9 4 boxes have a total mass of 300 kg.



2 boxes and 3 bags have a total mass of 441 kg.



What is the mass of 1 bag?

# Answers

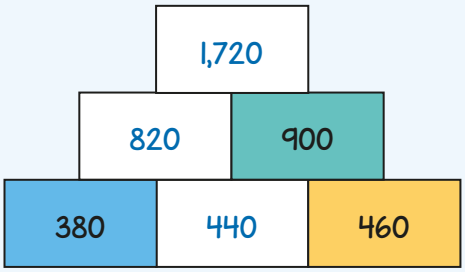

1. 4,339
   6,716
   46,512
   83

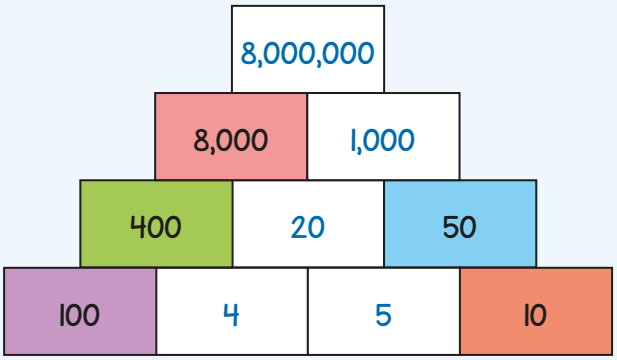
2. 

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 2 | 5 | 6 | 3 | |
| | + | 7 | 1 | 6 | 5 | |
| | | 9 | 7 | 2 | 8 | |

3. £547,000

4. 




5. Mo is incorrect because you cannot have a remainder greater than the number you are dividing by.
   The remainder is 1

6. 154 full packs
   8 more pencils

7. $8 \times 3 = 4 \times 6$
   $234 \div 6 = 468 \div 12$

8. There are 123 pens in box A now.

9. 97 kg

# 6 FOUR OPERATIONS (B)

From White Rose Maths schemes for Year 6 Autumn Term

**BLOCK 2 - FOUR OPERATIONS (B)**

**1** Circle all the square numbers.

1 2 15 64 134

**2** Tick the cards that are common factors of 12 and 20

| 6 | 5 | 60 | 2 | 4 |
|---|---|---|---|---|

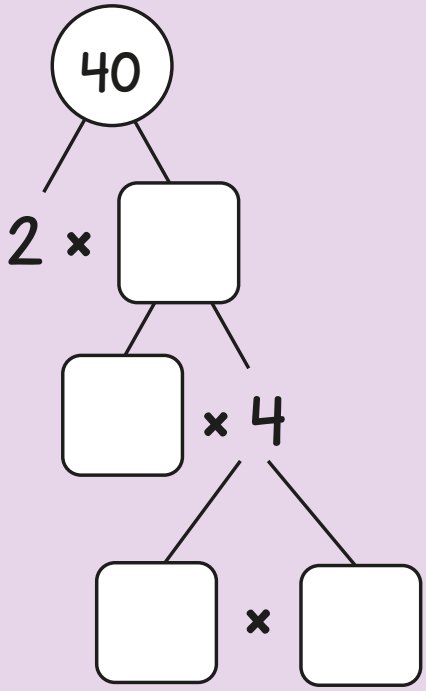
**3** Use the fact that 20 ÷ 4 = 5 to complete the divisions.

200 ÷ 4 = ☐

204 ÷ 4 = ☐

☐ ÷ 4 = 0.5

**4** Complete the prime factor tree.




**5** Which two calculations give the same answer?

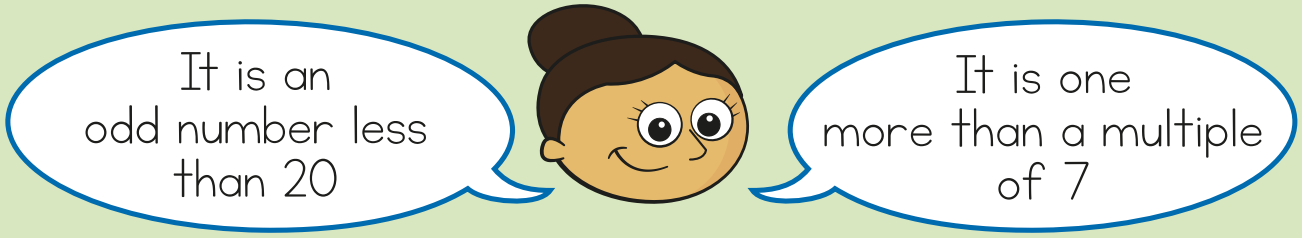
| | |
|---|---|
| A | 8 + 2 × 6 |
| B | (8 + 2) × 6 |
| C | 8 + (2 × 6) |

_____ and _____

**6** Tick the card that has the greatest value.

| | |
|---|---|
| $12^2$ | $6^3$ |

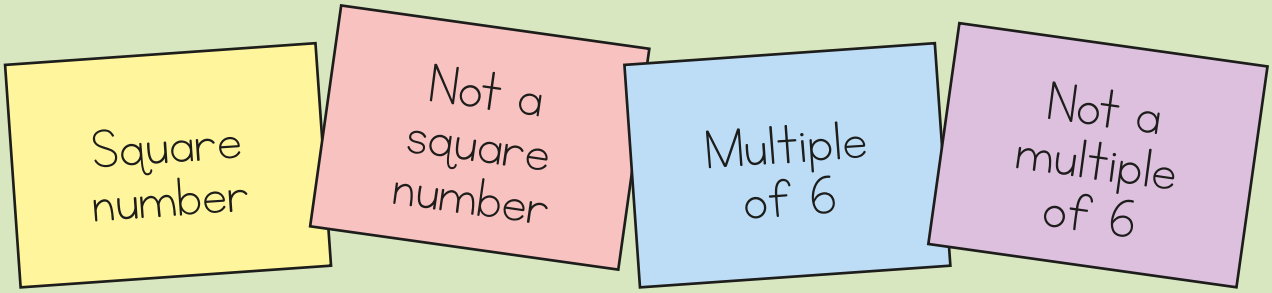
**7** Dora thinks of a positive whole number.




Is Dora's number prime? _____

Explain your reasoning.

**8** Complete the table by putting the cards in the correct place. One has been done for you.




| | | |
|---|---|---|
| | 36 144 | 12 24 60 30 |
| Not a multiple of 6 | 64 16 100 25 | 13 46 35 |

**9** Work out the missing numbers.

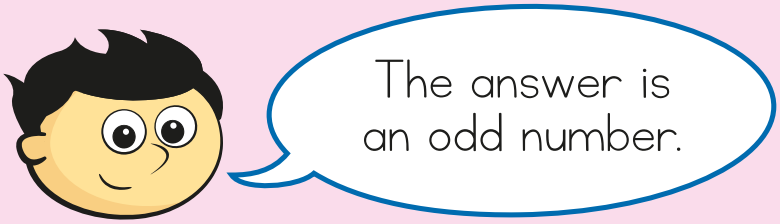
$2 \times 2 + 4 \times \square = 24$

$2 \times (2 + 4) \times \square = 24$

**10** Jack uses these digit cards.

| 5 | 2 | 9 | 6 |
|---|---|---|---|

- He makes a 3-digit number and a 1-digit number.
- He multiplies them together.




What could the multiplication be?

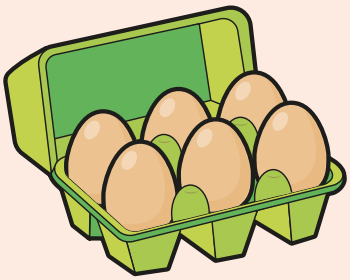
$\square\square\square \times \square$

**11** Alex has 4 boxes of eggs.

There are 6 eggs in each box.

She takes two eggs out of each box.

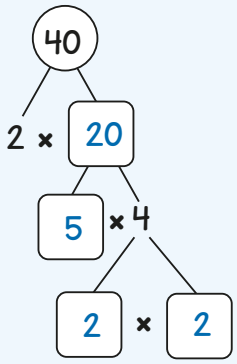
Circle the calculation that shows the total number of eggs in the boxes now.



$(4 \times 6) - 2$ $4 \times (6 - 2)$ $4 \times 6 - 2$

**12** Work out $78^2$

# Answers


1. (1) (64)
2. 2 4
3. 200 ÷ 4 = **50**
   204 ÷ 4 = **51**
   **2** ÷ 4 = 0.5
4. 

5. A and C
6. $6^3$
7. No
   Dora's number is 15, which is not a prime number.
8. 

| | Square number | Not a square number |
|---|---|---|
| Multiple of 6 | 36 144 | 12 24 60 30 |
| Not a multiple of 6 | 64 16 100 25 | 13 46 35 |

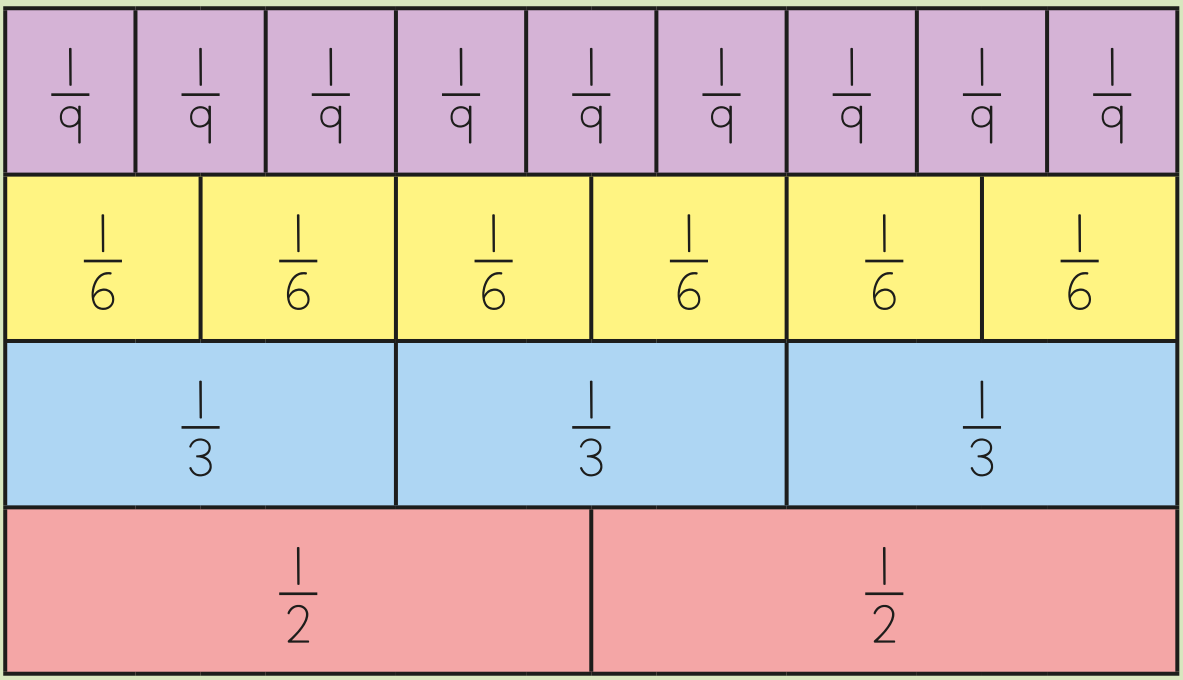
9. 2 × 2 + 4 × **5** = 24
   2 × (2 + 4) × **2** = 24
10. 629 × 5  269 × 5
    265 × 9  625 × 9
11. (4 × (6 − 2))
12. 6,084

# 6 FRACTIONS (A)

From White Rose Maths schemes for Year 6 Autumn Term

**BLOCK 3 - FRACTIONS (A)**

1




Use the fraction wall to simplify the fractions.

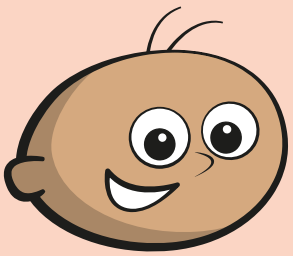
$\frac{2}{6} =$ ☐ $\quad 5\frac{6}{9} =$ ☐

Complete the statements.

$\frac{1}{2} = \frac{\square}{6}$

$\frac{2}{3} = \frac{\square}{9}$

2



$\frac{40}{60}$ is the same as $\frac{20}{30}$ and this is the same as $\frac{10}{15}$

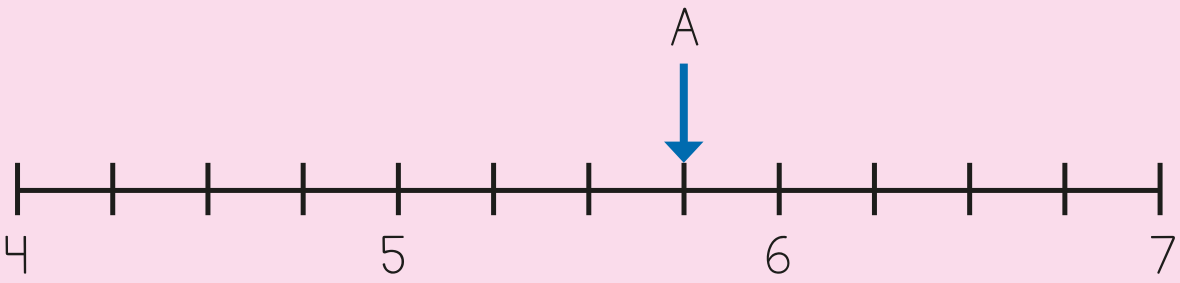
$\frac{10}{15}$ is $\frac{40}{60}$ in its simplest form because you can't halve 15 equally.

Is Tommy correct?

**Yes** **No**

Explain your answer.

**3**

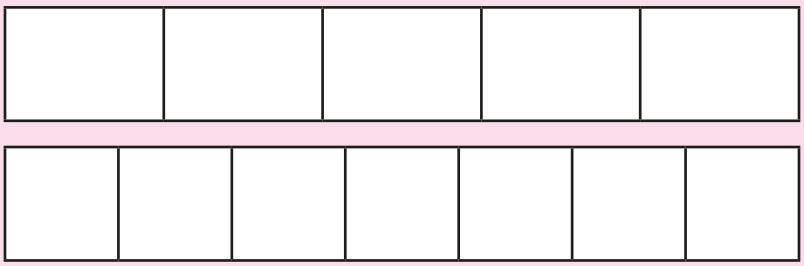



What number is the arrow pointing to?

Draw an arrow to the number that is $\frac{3}{4}$ less than A.

What number is $1\frac{1}{4}$ greater than A?

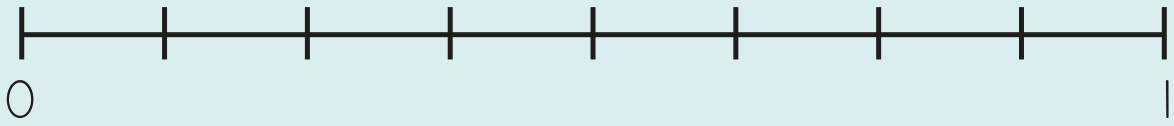
**4** Use the bar models to show that $\frac{4}{5}$ is greater than $\frac{4}{7}$



Show that $2\frac{2}{5}$ is less than $\frac{13}{5}$

**5** Write the fractions in order from smallest to greatest. You may use the number line to help you.

$\frac{3}{4}$ $\frac{7}{8}$ $\frac{1}{8}$ $\frac{3}{16}$



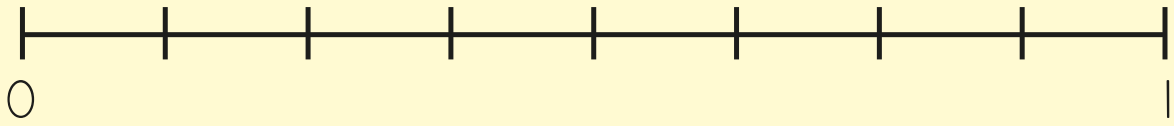

**6** Work out the additions.

$\frac{1}{4} + \frac{5}{8}$

$\frac{5}{6} + \frac{1}{4}$

$2\frac{5}{6} + 3\frac{1}{2}$

**7** Draw arrows from each fraction to its position on the number line.




$\frac{33}{44}$ $\frac{44}{88}$ $\frac{31}{31}$

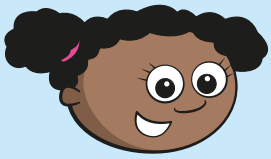
**8** Annie reads $\frac{1}{5}$ of her book on Monday.

She reads $\frac{2}{3}$ of the book on Tuesday.

On Wednesday she reads the rest of the book.

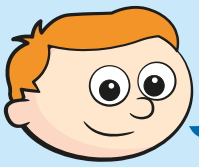
What fraction of the book did Annie read on Wednesday?

**9** Three friends share a chocolate bar.



Whitney

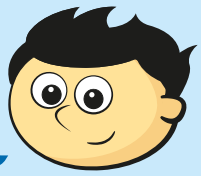
I got $\frac{3}{10}$ of the bar.

I got $\frac{8}{15}$

Ron

I got the rest.

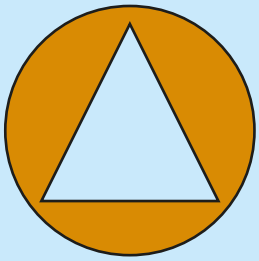


Jack

Who received the largest share? _____

Explain your answer.

**10** A circle has an area of $17\frac{1}{4}$ cm$^2$



Dexter cuts a triangle from the circle.

The triangle has an area of $4\frac{3}{8}$ cm$^2$

What is the area of the shape that is left?

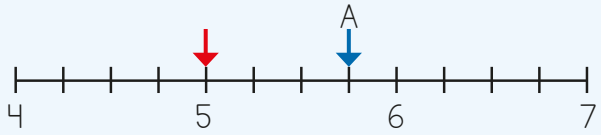
# Answers


**1** $\frac{1}{3}$ $5\frac{2}{3}$

$\frac{1}{2} = \frac{3}{6}$ $\frac{2}{3} = \frac{6}{9}$

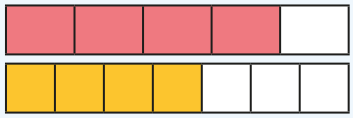
**2** No, it can be simplified to $\frac{2}{3}$

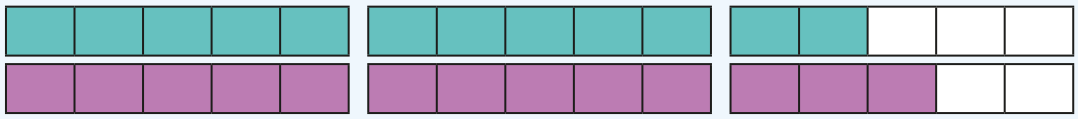
**3** $5\frac{3}{4}$




7

**4**



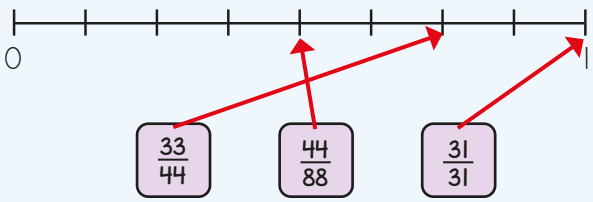


$2\frac{2}{5} = \frac{12}{5}$ $\frac{12}{5} < \frac{13}{5}$

**5** $\frac{1}{8}$ $\frac{3}{16}$ $\frac{3}{4}$ $\frac{7}{8}$

**6** $\frac{7}{8}$ $1\frac{1}{12}$ $6\frac{1}{3}$

**7**




**8** $\frac{2}{15}$

**9** Ron Whitney got $\frac{9}{30}$ Ron got $\frac{16}{30}$ Jack got $\frac{5}{30}$

**10** $12\frac{7}{8}$ cm$^2$