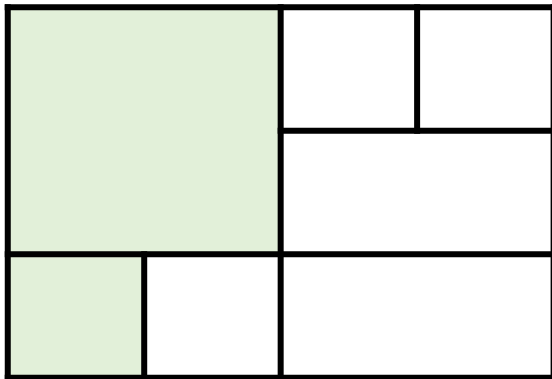
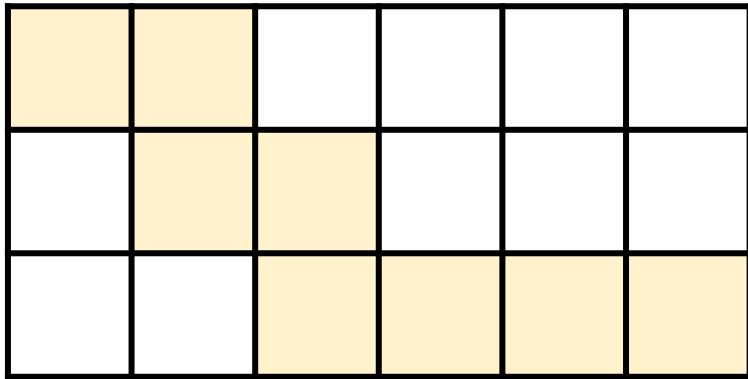


- 1 What fraction of each rectangle is shaded?



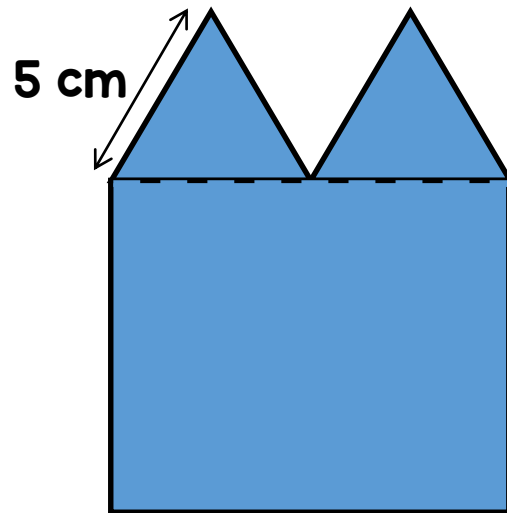
- 2 Work out the following fraction calculations.

(a) $\frac{3}{6} + \frac{1}{2}$

(b) $\frac{2}{5} + \frac{7}{15} + \frac{3}{5} + \frac{8}{15}$

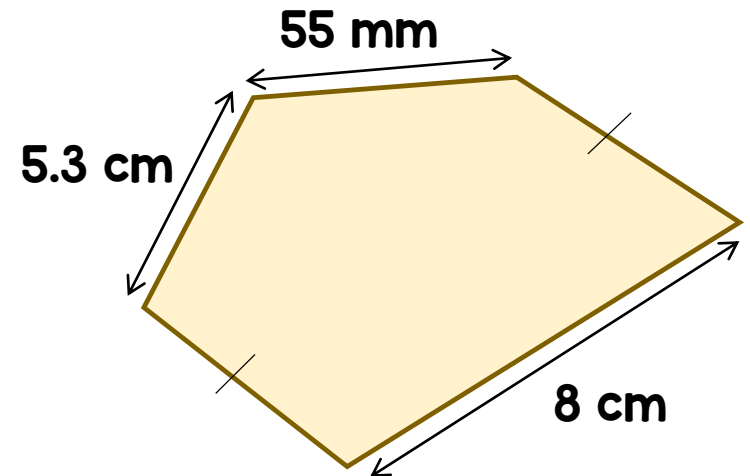
(c) $1 - \frac{1}{5} - \frac{3}{10}$

- 1 A shape is made up of two equilateral triangles and a square.



What is the perimeter of the shape?

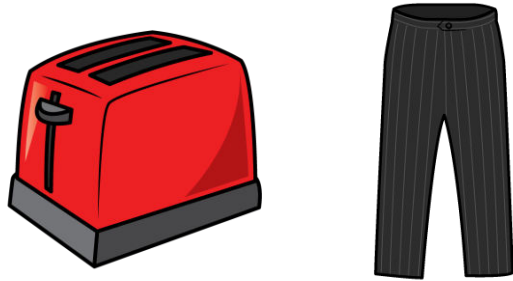
- 2 The perimeter of the pentagon is 25 cm.



Find the missing lengths.

1 Helen has £400

She spends $\frac{1}{10}$ of the money on a new toaster.



She spends $\frac{1}{8}$ of the amount left on a pair of trousers.

Which item costs the most?

2 $\frac{3}{8}$ of people watching a play are adults.

The rest of the people watching are children.

There are 32 more children than adults watching the play.

How many people are watching the play in total?

- 1 Usman saves 10p and 50p coins in his money box.



He has saved £12.70

32 of the coins in the money box are 10p coins.

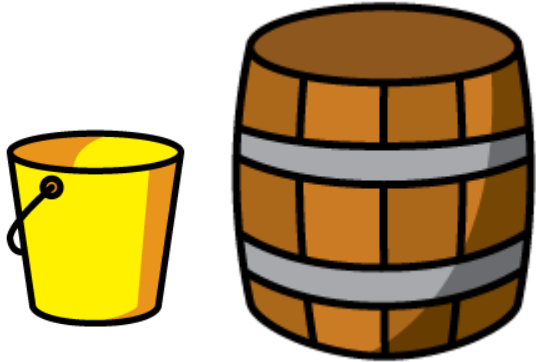
How many 50p coins are in the box?

- 2 The table shows the number of loaves of bread sold in a shop each week in February.

| Week | Number of loaves sold |
|----------------------|-----------------------|
| 1 st Week | 480 |
| 2 nd Week | 400 |
| 3 rd Week | 70 |
| 4 th Week | 250 |

Which week did the shop sell $\frac{1}{3}$ of the total number of loaves of bread sold in February?

1 A bucket holds 5 litres of water.



Yasmin uses 7 and a quarter buckets to fill the barrel with water.

How much water does the barrel hold?

2 Leah has a piece of ribbon 4.8 metres long.

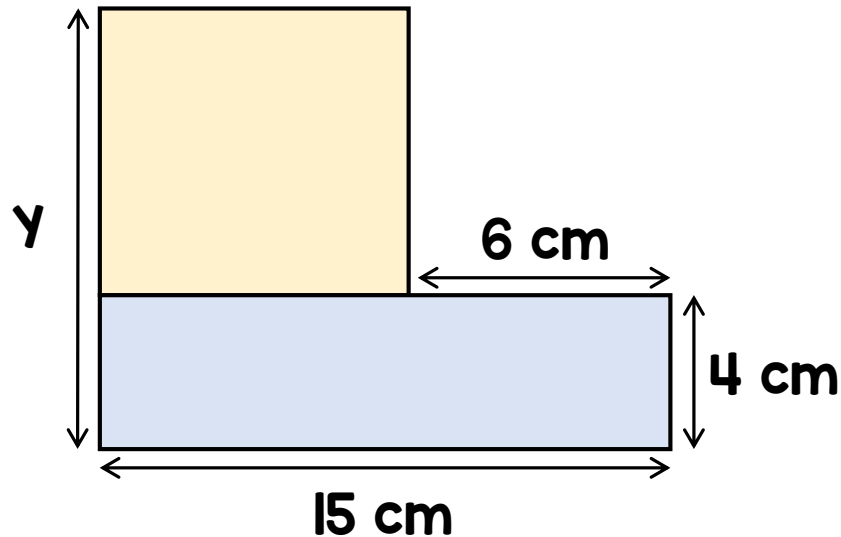


She cuts a 1.2 m piece of ribbon off from the end.

She cuts the remaining ribbon into 2 pieces of equal length.

How long are the pieces of ribbon?

- 1** The shape is made up of a square and a rectangle.



Find the length of the side y

- 2** Work out the missing numbers.

(a) $5 \times \frac{2}{3} = \square \times \frac{1}{3}$

(b) $10 \times \frac{3}{8} = \square \times \frac{5}{8}$

(c) $5 \times \frac{1}{4} = \square \times \frac{1}{8}$

1 A school makes 50 sandwiches each day.

The table shows the number of sandwiches sold each day last week.

| Day | Number of sandwiches sold |
|-----------|---------------------------|
| Monday | 20 |
| Tuesday | 32 |
| Wednesday | 47 |
| Thursday | 18 |
| Friday | 39 |

How many sandwiches in total were not sold last week?

2 Tony earns £600 a week.

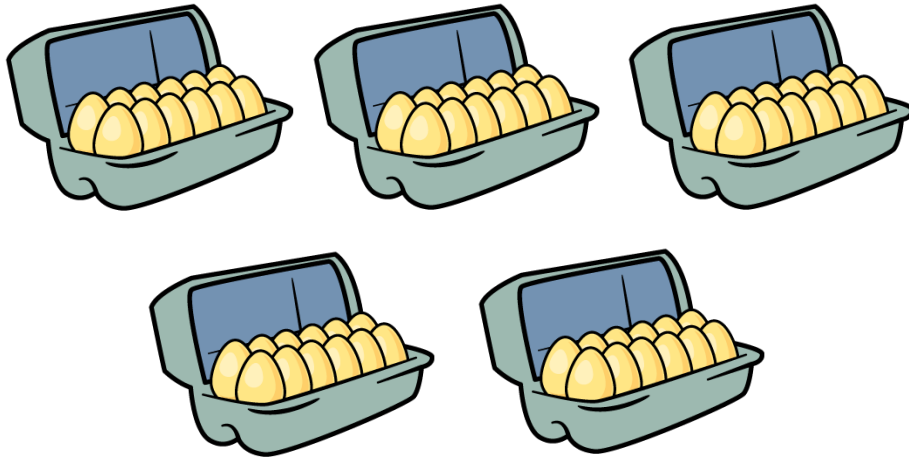


I spend $\frac{3}{10}$ of what I earn on rent for my house.

He spends 20% of the amount remaining on a new coat.

How much money does the coat cost?

1 Maisie buys 5 boxes of eggs.



Each box contains 12 eggs.

She uses 18 of the eggs.

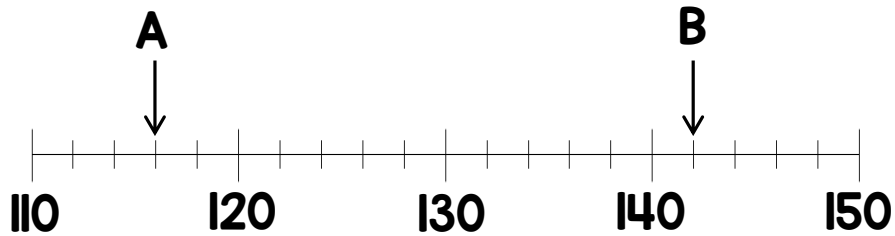
What fraction of the eggs does she have left?

2 Max has some bags of apples and some bags of oranges.

- There are twice as many oranges as apples in a bag.
- Max has 4 bags of apples and 3 bags of oranges.
- Max has 70 apples and oranges in total

How many oranges are in one bag?

- 1 A number line has 2 numbers marked.



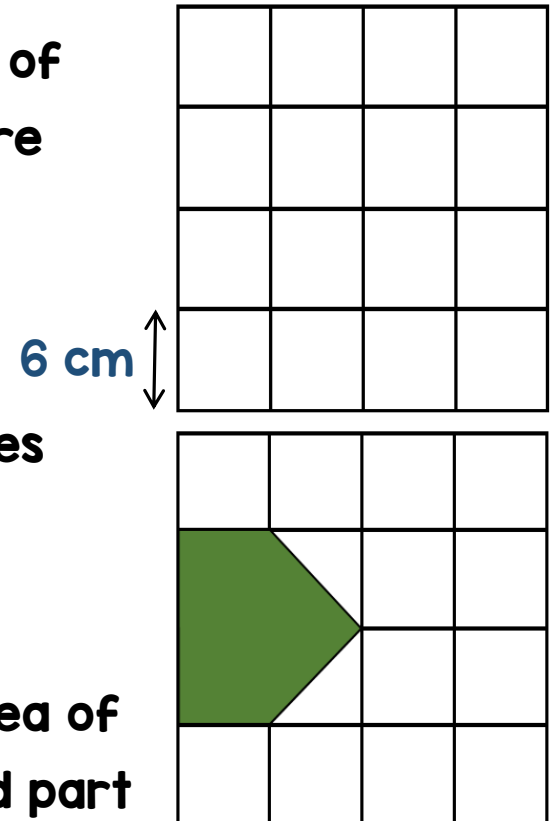
True or False

$$A + B > 250$$

Explain your answer.

- 2 Dana has a square grid.

The length of each square is 6 cm.



Dana shades in part of the grid.

What is area of the shaded part of the grid?

1 Which of the fractions add up to 1?

$$\frac{1}{5} \quad \frac{3}{10} \quad \frac{3}{5} \quad \frac{1}{2}$$

Which two of the fractions below have the greatest difference?

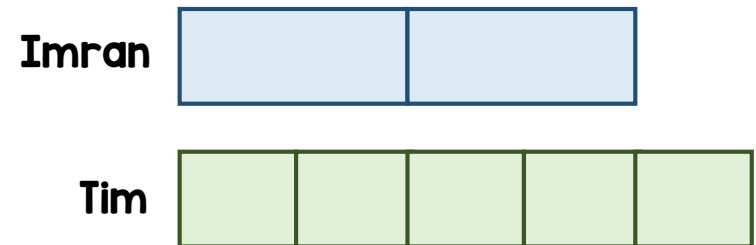
$$\frac{4}{9} \quad \frac{1}{3} \quad \frac{1}{6} \quad \frac{7}{18}$$

2 Imran and Tim each think of a number.

$\frac{1}{2}$ of Imran's number is equal to $\frac{2}{5}$ of Tim's number.

The total of their numbers is 144

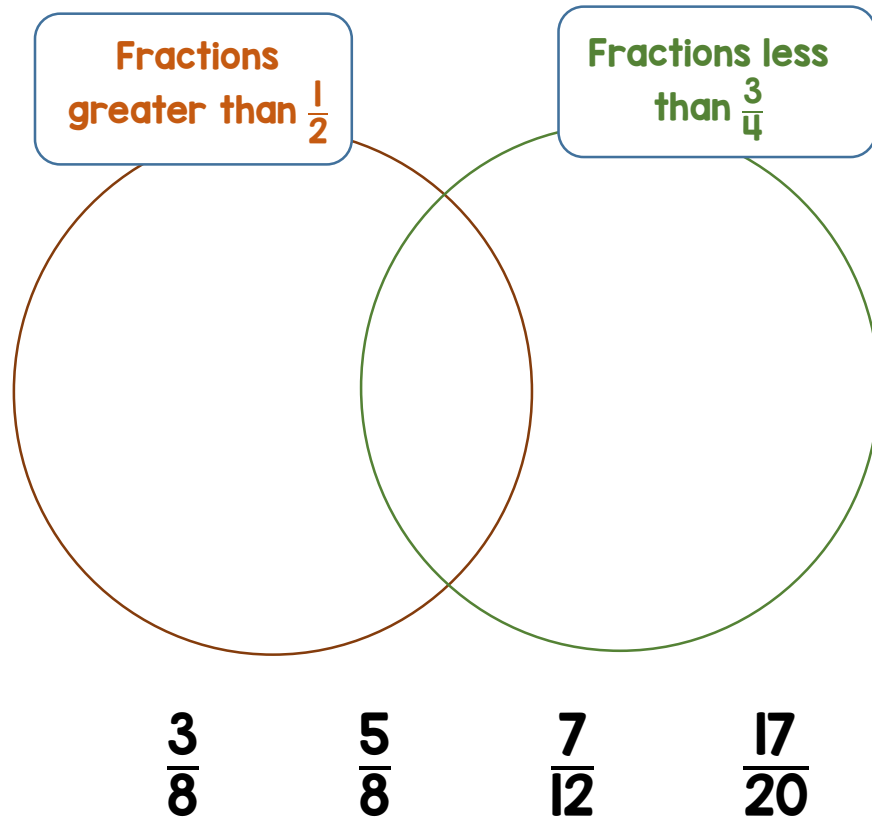
What number is Imran thinking of?



Problems of the Day 2019



- 1 Put the fractions into their correct position in the diagram.



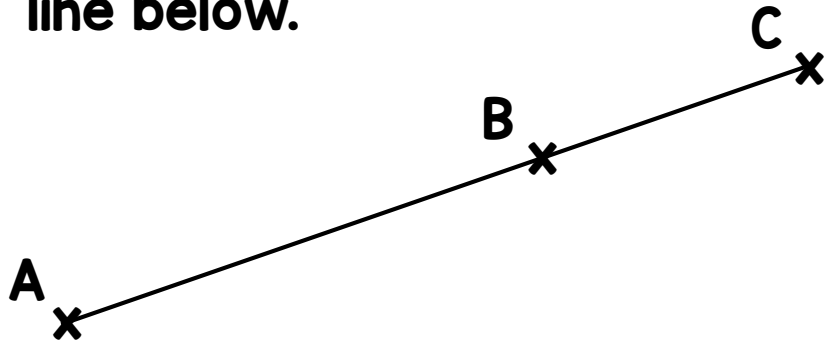
- 2 Amy makes a repeating pattern.



What shape will be in the 50th position?

Explain how you know.

- 1 Three points are marked on the line below.

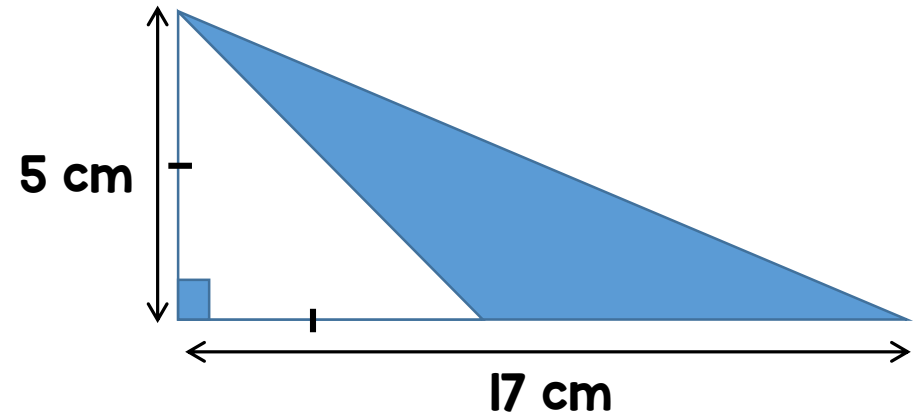


The distance from A to B is twice the distance from B to C.

The distance from A to B is 15 cm.

What is the distance from A to C?

- 2 What is the area of the shaded triangle?



1 Trading cards are sold as single cards or in packs of 5 or 10

- A single card costs 50p
- A pack of 5 cards costs £2
- A pack of 10 cards costs £3.50

Max has £10 to spend.

What is the maximum number of trading cards he can buy?

2

$\frac{2}{5}$ of a number is equal to $\frac{3}{4}$ of a different number.

The smaller of the two numbers is 80

What is the value of the largest number?

| | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

1 Complete the missing numbers.

$$128 \times 12 = 128 \times 10 + 128 \times \boxed{}$$

$$128 \times 12 = 127 \times 12 + \boxed{}$$

$$128 \times 12 = 128 \times 6 \times \boxed{}$$

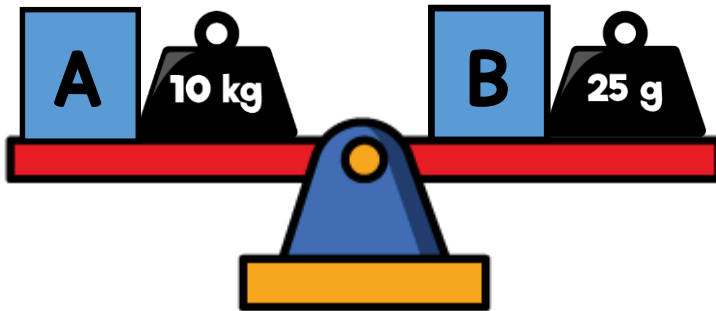
2 Mark has £150 and Jan has £120

Mark gives Jan some money.

Jan now has twice as much as Mark.

How much money did Mark give Jan?

1 Here are some scales.



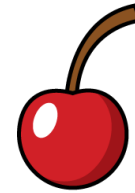
Which is the heavier box, A or B?

Explain your answer.

2 A shop sells these fruits.



Strawberries
£2.20 per $\frac{1}{2}$ kg



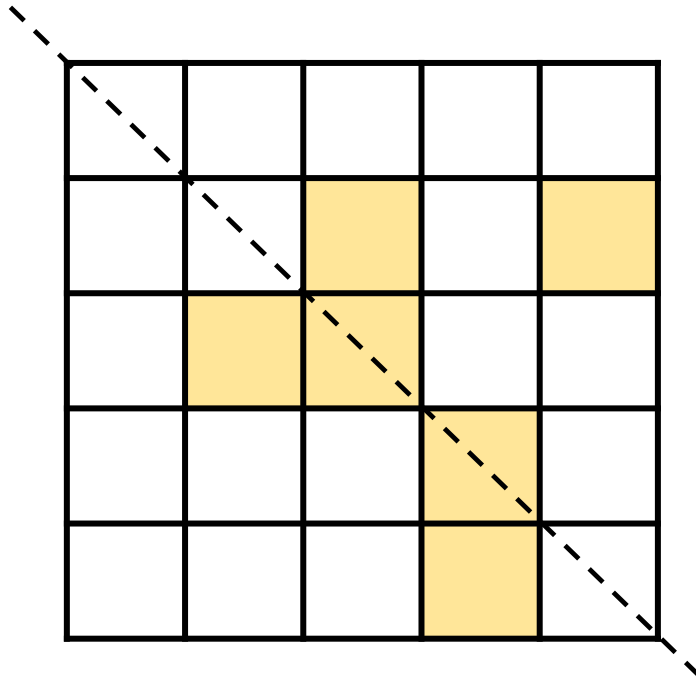
Cherries
£3.50 per $\frac{1}{4}$ kg

Megan buys

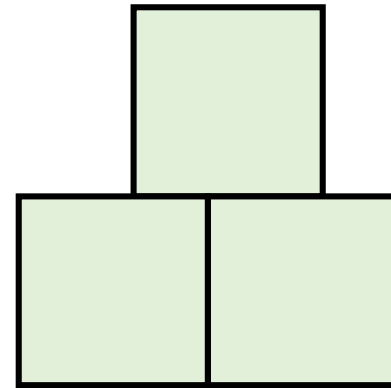
- 2 kg of strawberries and
- 750 grams of cherries

How much does she spend in total?

- 1 Shade in 2 more squares so that the dotted line is a line symmetry.



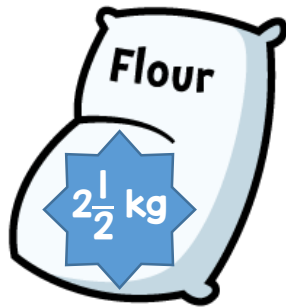
- 2 A shape is made of 3 identical squares.



The area of the shape is 75cm^2 .

What is the perimeter of the shape?

- 1 A bag contains $2\frac{1}{2}$ kg of flour.



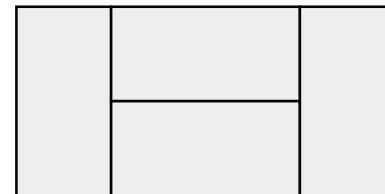
Another bag contains $1\frac{1}{4}$ kg more flour than the first bag.

How much flour is there in the two bags in total?

- 2 A rectangle has a perimeter of 84 cm.

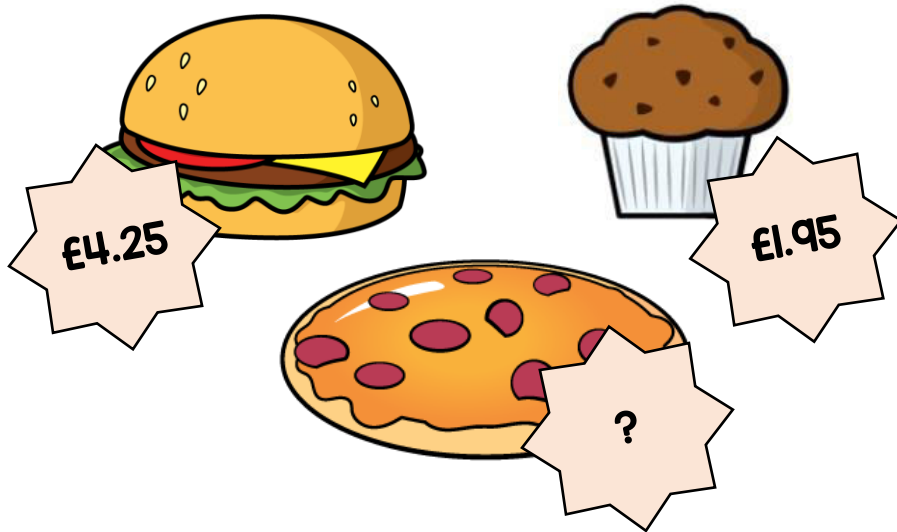


It is divided into 4 identical rectangles.



What is the length of one of the smaller rectangles?

- 1** Leo has £25
He buys the following items.



He has £12.50 left.

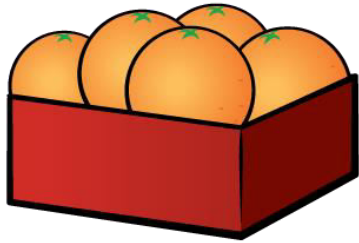
How much does the pizza cost?

- 2** Alysha and Beth go on a bike ride.

- In the morning Alysha cycles 3 times as many km as Beth.
- In the afternoon Alysha cycles 14 km and Beth cycles 48 km.
- They have now cycled the same distance.

How many km did Alysha cycle in the morning?

- 1 A box of 5 oranges cost £1.80



How much do 80 oranges cost?
Show your method.

- 2 Jane reads a book.

- On Monday she reads 26 pages.
- On Tuesday she reads $\frac{2}{5}$ of the remaining pages.
- On Wednesday she reads the final 36 pages.

How many pages are in the book?

1 Tanya bakes some cookies to sell.

- By 1pm she has sold 29 cookies.
- By 3pm she has sold 50% of all the cookies.
- At 3pm she has 72 cookies left.

How many cookies does she sell between 1pm and 3pm?

2 David has 3 number cards.

- The sum of A and B is 120
- The sum of B and C is 150
- If you subtract B from C you get 12

What is the value of A?

