Ratio

Key Vocabulary

ratio
proportion
"for every… there are…"
part
whole
scale factor
enlargement
similar shapes
length
width
perimeter

Ratio Language

For every 1 circle, there are 2 triangles.

For every 2 bananas, there are 3 apples.

For every 1 football, there are 3 rugby balls.

Ratio and Fractions

For every 1 rugby ball, there are 2 footballs.

Ratio of rugby balls to footballs: 1:2

$\frac{1}{3}$ of the balls are rugby balls.

For every 1 triangle, there are 3 squares.

Ratio of triangles to squares: 1:3

$\frac{1}{4}$ of the shapes are triangles.

The Ratio Symbol

The ratio of footballs to rugby balls: 1:4

The ratio of rugby balls to footballs: 4:1

The ratio of circles to triangles: 2:3

The ratio of triangles to circles: 3:2

The ratio of apples to bananas: 1:2

The ratio of bananas to oranges: 2:3

The ratio of apples to bananas to oranges: 1:2:3

The ratio of oranges to bananas to apples: 3:2:1

Ratio

Ratio and Proportion Problem-Solving

To use the ingredients for 1 person, you divide all the quantities by 10 (÷ 10).

Ingredients for Fruit Smoothie

(serves 10 people)

800g of bananas

500g of strawberries

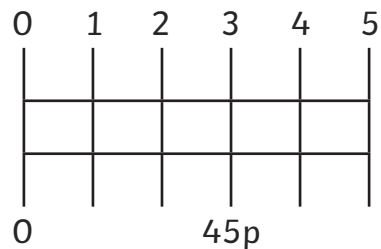**200g** of raspberries

700ml of milk

300ml of natural yogurt

To use the ingredients for 5 people, you halve all the quantities (÷ 2).

To use the ingredients for 20 people, you double all the quantities (× 2).

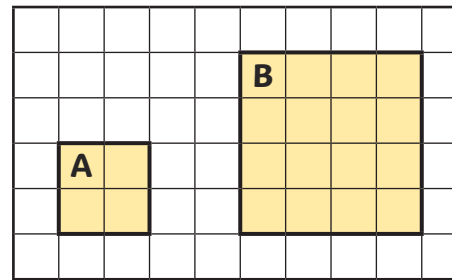In a bag of 15 sweets, there is 1 smiley face sweet for every 4 love heart sweets.

Therefore, there will be 3 smiley face sweets and 12 love heart sweets in the bag.

0 1 2 3 4 5

0   45p

3 bananas cost 45p.
So, one banana costs
45 ÷ 3 = 15p.
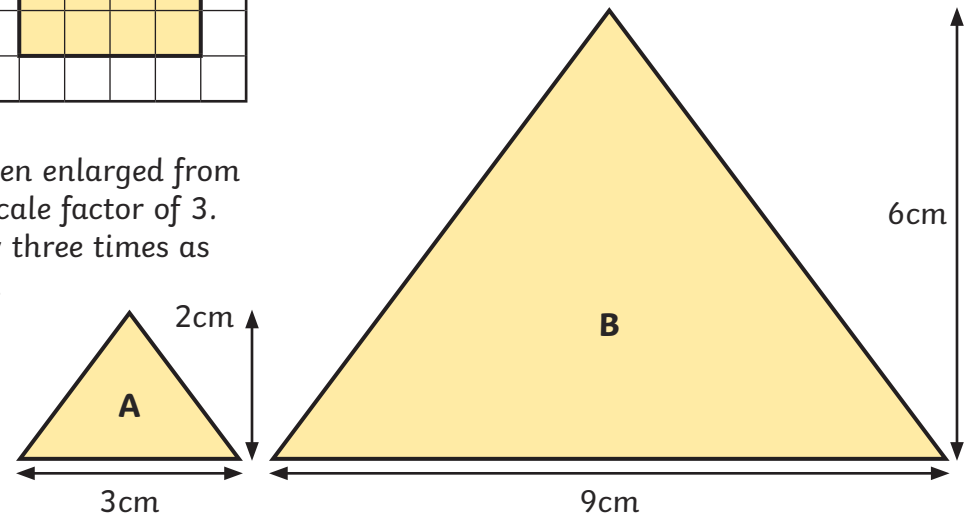5 bananas cost
5 × 15 = 75p.

Scale Factors

Shape A has been enlarged by a scale factor of 2 to make Shape B.

Shape B is now two times as big as Shape A.

Shape B has been enlarged from Shape A by a scale factor of 3. Shape B is now three times as big as Shape A.

2cm

3cm

6cm

9cm

Similar Shapes

Where one shape is an enlargement of the other, the two shapes are similar. All sides have been enlarged by the same scale factor. These 3 triangles are similar.