

1 Simplifying ratios ☐

- a) Write 1.2 kg : 450 g in its simplest form.
b) Write 8 : 5 in the form $n : 1$.

$$1200 : 450$$

$$a) 8 : 3$$

$$b) 1.6 : 1$$

2 Sharing in a ratio ☐

A smoothie is mango, yoghurt and oat milk in the ratio 2 : 5 : 1. It has 45 ml more yoghurt than mango.
How much smoothie is there?

$$3 \text{ parts} = 45 \text{ ml}, 1$$

$$\text{part} = 15 \text{ ml}$$

$$8 \times 15 = 120 \text{ ml}$$

3 Ratios and fractions ☐

$\frac{1}{6}$ of some beads are red.
The rest are blue : green = 2 : 3.

- a) What fraction of the beads are green?
b) Write red : blue : green in its simplest form.

$$a) \frac{5}{6} \times \frac{3}{5} = \frac{1}{2}$$

$$b) 1 : 2 : 3$$

4 Missing amounts ☐

Electric cars : petrol cars = 3 : 8.
There are 24 petrol cars.

- a) How many electric cars?
b) 6 more electric cars arrive.
Write the new ratio in its simplest form.

$$a) 24 \div 8 \times 3 = 9$$

$$b) 15 : 24 = 5 : 8$$

5 Combining ratios ☐

In a garden centre,
roses : tulips = 2 : 3 and
tulips : lilies = 4 : 5.

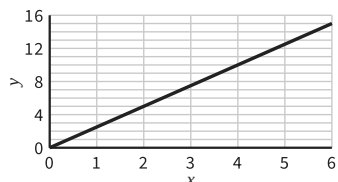
- a) Write roses : tulips : lilies in its simplest form.
b) There are 35 more lilies than roses. How many flowers is that altogether?

$$a) 8 : 12 : 15$$

$$b) 35 \div 7 \times 35 = 175$$

6 Ratios and linear functions ☐

- a) Write $x : y$ in its simplest form.
b) Write an equation for y in terms of x .



$$a) 2 : 5 \quad b) y = 2.5x$$

Ratio and proportion revision mat answers

Higher A

7 Direct proportion ☐

5 litres of paint cover 32 m².
Paint comes in 2.5 litre tins. How many tins are needed to cover 52 m²?

$$32 \div 5 = 6.4 \text{ m}^2 \text{ per litre}$$

$$52 \div 6.4 = 8.125 \text{ litres}$$

$$8.125 \div 2.5 = 3.25, \text{ so } 4 \text{ tins}$$

8 Inverse proportion ☐

6 pumps empty a tank in 10 hours.
All the pumps work at the same rate.

- a) How long would 4 pumps take?
b) The 6 pumps start. After 3 hours, 2 pumps stop. How much longer until the tank is empty?

$$6 \times 10 = 60 \text{ pump hours}$$

$$a) 60 \div 4 = 15 \text{ hours}$$

$$b) 60 - 18 = 42,$$

$$42 \div 4 = 10.5 \text{ hours}$$

9 Proportion formulae ☐

The mass of a wire, M g, is directly proportional to its length, L m. 2.5 m of wire has a mass of 40 g.

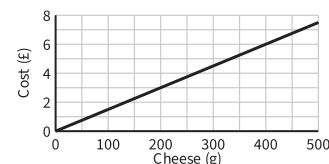
- a) Write a formula for M in terms of L .
b) Find the length of wire with a mass of 1 kg.

$$a) 40 \div 2.5 = 16, M = 16L$$

$$b) 1000 \div 16 = 62.5 \text{ m}$$

10 Direct proportion graphs ☐

- a) How does the graph show direct proportion?
b) Find the cost of 1.5 kg of cheese.



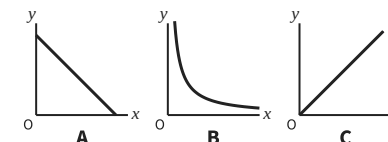
$$a) \text{ straight, through } (0, 0)$$

$$b) 1500 \div 400 \times 6 = \text{£}22.50$$

11 Inverse proportion graphs ☐

y is inversely proportional to x .

- a) Which sketch, A, B or C, shows this?
b) When $x = 4$, $y = 9$. Find y when $x = 12$.



$$a) B$$

$$b) k = 4 \times 9 = 36, y = 36 \div 12 = 3$$