

1 Time intervals

A coach leaves at 09:47 and arrives at 13:22.

- a) How long is the journey?
b) The coach back leaves at 16:55. It takes 25 minutes longer. When does it arrive?

$$\text{a) } 09:47 \text{ to } 10:00 \text{ is } 13 \text{ min, then } 3 \text{ h } 22 \text{ min} \\ = 3 \text{ h } 35 \text{ min}$$

$$\text{b) } 4 \text{ h after } 16:55 \text{ is } 20:55$$

2 Converting metric units

- a) Work out $4.2 \text{ m} + 85 \text{ cm} + 1300 \text{ mm}$. Give your answer in metres.
b) A jug holds 1.5 litres of juice. How many 120 ml glasses can be filled from it?

$$\text{a) } 4.2 + 0.85 + 1.3 = 6.35 \text{ m}$$

$$\text{b) } 1500 \div 120 = 12.5$$

$$12 \text{ glasses}$$

3 Converting units of area and volume

- a) Change 3.5 m^2 to cm^2 .
b) A tank measures 120 cm by 50 cm by 40 cm. Work out its volume in m^3 .

$$\text{a) } 3.5 \times 100 \times 100 = 35\,000 \text{ cm}^2$$

$$\text{b) } 1.2 \times 0.5 \times 0.4$$

$$= 0.24 \text{ m}^3$$

4 Speed, distance and time

A cyclist rides 54 km in 2 hours 15 minutes.

- a) Work out her average speed in km/h.
b) Write this speed in metres per second.

$$\text{a) } 2 \text{ h } 15 \text{ min} = 2.25 \text{ h}$$

$$54 \div 2.25 = 24 \text{ km/h}$$

$$\text{b) } 24\,000 \div 3600 = 6.67 \text{ m/s}$$

5 Speed, distance and time

Ravi runs 9 km at 12 km/h, then 5 km at 10 km/h.

- a) How many minutes does he run for altogether?
b) Work out his average speed for the whole run.

$$\text{a) } 9 \div 12 = 0.75 \text{ h, } 5 \div 10 = 0.5 \text{ h}$$

$$45 + 30 = 75 \text{ min}$$

$$\text{b) } 14 \div 1.25 = 11.2 \text{ km/h}$$

Measure revision mat answers

Higher A

6 Density

Liquid A has a density of 1.2 g/cm^3 . Liquid B has a density of 0.8 g/cm^3 .

- a) Work out the mass of 300 cm^3 of liquid A.
b) 300 cm^3 of A is mixed with 200 cm^3 of B. Work out the density of the mixture.

$$\text{a) } 1.2 \times 300 = 360 \text{ g}$$

$$\text{b) B: } 0.8 \times 200 = 160 \text{ g}$$

$$(360 + 160) \div 500 = 1.04 \text{ g/cm}^3$$

7 Pressure

This box weighs 720 N. It can rest on any of its faces.

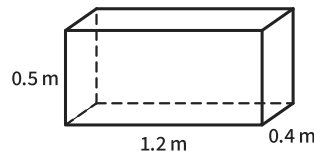
- a) Work out the least pressure it can put on the floor.

- b) Work out the greatest pressure.

$$\text{a) largest face } 1.2 \times 0.5 = 0.6 \text{ m}^2$$

$$720 \div 0.6 = 1200 \text{ N/m}^2$$

$$\text{b) } 0.5 \times 0.4 = 0.2 \text{ m}^2, 720 \div 0.2 = 3600 \text{ N/m}^2$$



8 Calculator answers: money and time

- a) A calculator shows 3.35 for a time in hours. Write the time in hours and minutes.
b) A plumber charges £42.50 an hour. She works for 2 hours 20 minutes. How much does she charge?

$$\text{a) } 0.35 \times 60 = 21, 3 \text{ h } 21 \text{ min}$$

$$\text{b) } 42.50 \times 2\frac{1}{3} = 99.1666...$$

$$£99.17$$