

1 Time intervals



- a) A flight leaves at 22:40 and takes 7 hours 55 minutes. What time does it land?
- b) A bus leaves every 18 minutes from 06:50. Is there a bus at 09:00? If not, when is the next one?

a) 22:40 to midnight is 1 h 20 min
6 h 35 min left: 06:35 the next day
b) 06:50 to 09:00: $130 \div 18 = 7.2\dots$, so no
 $8 \times 18 = 144$ min after 06:50: 09:14

2 Converting metric units



- a) Write in order, smallest first: 0.6 kg, 580 g, 61 000 mg.
- b) A recipe uses 175 ml of milk for each batch. How many batches can be made from a 2 litre carton, and how much milk is left?

a) 600 g, 580 g, 61 g
61 000 mg, 580 g, 0.6 kg
b) $2000 \div 175 = 11.4\dots$
11 batches, $2000 - 1925 = 75$ ml left

3 Converting units of area and volume



- a) A tank holds 0.8 m^3 of water. How many litres is that?
- b) A floor 4.8 m by 3.6 m is covered with square tiles of side 40 cm. How many tiles are needed?

a) $0.8 \times 1\,000\,000 = 800\,000 \text{ cm}^3$
 $\div 1000 = 800$ litres
b) $480 \div 40 = 12$, $360 \div 40 = 9$
 $12 \times 9 = 108$ tiles

4 Speed, distance and time



- a) A train travels at 135 km/h for 2 hours 40 minutes. How far does it go?
- b) A cheetah runs 100 m in 3.5 seconds. A car drives at 100 km/h. Which is faster? Show how you decide.

a) $2 \text{ h } 40 \text{ min} = 2\frac{2}{3} \text{ h}$
 $135 \times 2\frac{2}{3} = 360 \text{ km}$
b) $100 \div 3.5 = 28.57 \text{ m/s}$
 $\times 3.6 = 102.9 \text{ km/h}$, the cheetah

Measure revision mat answers



5 Speed, distance and time



- Mo drives 150 km at an average speed of 60 km/h. The first 90 km take 1 hour 15 minutes.
- a) How long does the whole drive take?
- b) Work out his average speed for the last 60 km.

a) $150 \div 60 = 2.5 \text{ h} = 2 \text{ h } 30 \text{ min}$
b) $2 \text{ h } 30 \text{ min} - 1 \text{ h } 15 \text{ min} = 1.25 \text{ h}$
 $60 \div 1.25 = 48 \text{ km/h}$

6 Density



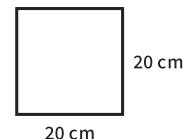
- a) Gold has a density of 19.3 g/cm^3 . Work out the volume of a 12.5 kg gold bar, to 1 decimal place.
- b) A cube of side 4 cm has a mass of 172.8 g. Work out its density.

a) $12.5 \text{ kg} = 12\,500 \text{ g}$
 $12\,500 \div 19.3 = 647.7 \text{ cm}^3$
b) volume $4^3 = 64 \text{ cm}^3$
 $172.8 \div 64 = 2.7 \text{ g/cm}^3$

7 Pressure



- a) A force of 450 N acts on an area of 0.03 m^2 . Work out the pressure.
- b) A box with this square base puts a pressure of 2500 N/m^2 on the floor. Work out its weight in newtons.



a) $450 \div 0.03 = 15\,000 \text{ N/m}^2$
b) $20 \text{ cm} = 0.2 \text{ m}$, area 0.04 m^2
 $2500 \times 0.04 = 100 \text{ N}$

8 Calculator answers: money and time



- a) Write 4 hours 48 minutes in hours, as a decimal.
- b) A 2.5 kW heater is on for 3 hours 45 minutes. Electricity costs 28.4p per kWh. Work out the cost to the nearest penny.

a) $48 \div 60 = 0.8$, 4.8 hours
b) $2.5 \times 3.75 = 9.375 \text{ kWh}$
 $9.375 \times 28.4 = 266.25\text{p} = \text{£}2.66$