FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... Class .....

# N13: Units and measures

*Solve problems involving units and compound measures*

20 marks · 25 minutes · Non-calculator

**1)** A car uses 6 litres of fuel per 100 km. Fuel costs £1.50 per litre. How much does the fuel cost for a 240 km journey?

£ .....

**[Question 1: 3 marks]**

**2)** Water flows at 3 litres per minute into an empty tank measuring 60 cm by 40 cm by 50 cm. How long does it take to fill?

..... minutes

**[Question 2: 3 marks]**

---

**3)** A runner runs 400 m in 1 minute 20 seconds. Find her average speed in km/h.

..... km/h

**[Question 3: 3 marks]**

---

**4)** A metal block measures 4 cm by 5 cm by 10 cm and has density 7.8 g/cm$^3$. How many blocks can be packed in a box if the total mass of blocks must be less than 10 kg?

.....

**[Question 4: 3 marks]**

**5)** **5)** A jacket costs 69 euros in Paris and £58 in London. £1 = 1.15 euros. Where is it cheaper, and by how much in pounds?

.....

**[Question 5: 3 marks]**

.....

**[Question 5: 3 marks]**

**6)** A train leaves at 09:47. The journey should take 2 hours 38 minutes, but it is delayed by 15 minutes. At what time does it arrive?

.....

**[Question 6: 2 marks]**

**7)** A box with a weight of 600 N rests on a face measuring 0.3 m by 0.5 m. Find the pressure on the floor.

..... $N/m^2$

**[Question 7: 3 marks]**

**End of paper – 20 marks in total**

# Answers and brief mark scheme

| Q | Answer | Method / notes |
|---|---|---|
| 1 | £21.60 | 14.4 litres (P1, P1); A1. |
| 2 | 40 | 120 000 $cm^3$ (P1); 120 litres (P1); 40 (A1). |
| 3 | 18 | 5 m/s (P1); $\times$3.6 (P1); A1. |
| 4 | 6 | 200 $cm^3$, mass 1560 g (P1, P1); 10 000 $\div$ 1560 = 6.4, so 6 (A1). |
| 5 | London, £2 | 69 euros = £60 (P1, P1); London cheaper by £2 (A1). |
| 6 | 12:40 | Total 2 h 53 min (P1); A1. |
| 7 | 4000 | Area 0.15 $m^2$ (P1); 600 $\div$ 0.15 (P1); A1. |