

KS3 – Rates – Answers

Section A – Speed

Q1

- a) Speed = distance ÷ time
- b) km/h
- c) Time

Q2

- a) 60 km/h
- b) 15 km/h
- c) 8 km/h
- d) 75 km/h

Q3

- a) 150 km
- b) 36 km
- c) 400 km

Q4

- a) 3 hours
- b) 3 hours
- c) 5 hours

Q5

- a) 60 km/h
- b) 36 km
- c) 3 hours

Q6

Total distance = 240 km.
Total driving time = 4 hours.
Average speed = 60 km/h.

Section B – Density

Q7

- a) Density = mass ÷ volume
- b) g/cm^3
- c) Greater

Q8

- a) 4 g/cm^3
- b) 3 g/cm^3
- c) 3 g/cm^3
- d) 9 g/cm^3

Q9

- a) 24 g
- b) 50 g
- c) 63 g

Q10

- a) 8 cm^3
- b) 20 cm^3
- c) 12 cm^3

Q11

- a) 3 g/cm^3
- b) 120 g
- c) 24 cm^3

Q12

Block A: $75 \div 25 = 3 \text{ g/cm}^3$.

Block B: $125 \div 25 = 5 \text{ g/cm}^3$.

Block B is denser.

Section C – Pressure

Q13

- a) Pressure = force $\div$ area
- b) N/m^2 (or Pa)
- c) Increase

Q14

- a) 20 N/m^2
- b) 20 N/m^2
- c) 30 N/m^2
- d) 15 N/m^2

Q15

- a) 80 N
- b) 90 N
- c) 200 N

Q16

- a) 4 m^2
- b) 6 m^2
- c) 5 m^2

Q17

- a) 30 N/m^2
- b) 84 N
- c) 8 m^2

Q18

Box A: $120 \div 6 = 20 \text{ N/m}^2$.

Box B: $120 \div 3 = 40 \text{ N/m}^2$.

Box B produces the greater pressure.