Compound Measures Exam Practice

Q1. A car travels 320 km in 4 hours. Work out the average speed
of the car.

(1 mark)

Q2. A woman jogs at a steady 6 km per hour for 45 minutes. Work out
the distance she travels.

(1 mark)

Q3. Copper has a density of 9 grams per cm³. Work out the volume of a
block of copper which has a mass of 3.15 kg.

(2 marks)

Q4. A cube of iron, which has side length 6 cm, is made for a display.
If the mass of the cube is 1.71 kg, work out the density of the cube,
giving your answer in grams per cm³, to 2 decimal places.

(3 marks)

Q5. Jo cycles 71.5 km in 3 hours and 15 minutes. Work out her average speed.

(2 marks)

Q6. Light travels at 300,000 km per second. If the distance from the
earth to the planet Jupiter is currently at 870 million km, work out
the length of time it takes light to travel from Jupiter to the earth.

(2 marks)

Q7. (i) On Monday, Rod travels from Lees to Ashlington at an average speed
of 55 miles per hour. The journey takes him 2 hours and 45 minutes.
On Friday, he makes the same journey in 2 hours and 12 minutes.
Work out Rod's average speed for his journey on Friday, giving your
answer to the nearest mile per hour.

(4 marks)

(ii) Suppose that on Friday, Rod drives on different roads than he did on
Monday, and finds his average speed is higher. What can you conclude
about his route on Friday?

(1 mark)

Q8. A box exerts a force of 180 Newtons on a table. The pressure on the table is
55 Newtons/m² . Calculate the area of the box that is in contact with the
table. You are given that: $P = \frac{F}{A}$, where P = Pressure (Newtons/m²),
F = Force (Newtons)
A = area (m²)

(2 marks)

Q9. Two metals, A and B, are to be melted down and mixed to metal C. Metal A has a density of 2.5 grams per cm³. 180 grams of Metal A is melted down with some of Metal B to make Metal C. Metal C has a mass of 577.5 g and a density of 1.65 grams per cm³.
Find the density of Metal B, giving your answer correct to 2 d.p.

(4 marks)

Q10. Paul sets off from Arlington to Bardley, which is a distance of 95 miles, at 9.00 am. He drives for the first 40 minutes at an average speed of 36 miles per hour, and then stops off at a café for a break for half an hour. What average speed must he travel at for the rest of the journey, if he is to arrive at Bardley for 11.20 am? Give your answer to the nearest mile per hour.

(4 marks)

Q11. Object A is travelling at 16 metres per second. Object B is travelling at 550 km per hour. Determine which of these objects is travelling the slowest, showing all your steps of working.

(3 marks)

Q12. In a building site, a mini-crane is required to lift a concrete block in the shape of a cuboid. The maximum load the crane can lift is 2200 kg. The cuboid measures 2 metres by 40 cm by 1 metre, and the density of the block is 2.8g/cm³.
Work out if the crane can lift the concrete block, explaining all your reasoning carefully.

(4 marks)

Q13. A race-track is 1 mile in length. To qualify for a race, drivers need to average 60 mph over two laps of this race-track. Nigel completes his first lap at an average speed of 45mph.
At what average speed will he need to complete his second lap in order to qualify?

(4 marks)