Ratio & Proportion: Hard Practice Paper 7

Q1. In a class the ratio of boys to girls is 3 : 4. If 2 boys leave and 2 girls join, the ratio becomes 1 : 2. How many pupils were in the class at first?

A. 24 *B.* 28 *C.* 14 *D.* 35 *E.* 21

Q2. Three workers lay 90 m of pipe in 5 days. How many days would 5 workers take to lay 300 m at the same rate?

A. 9 *B.* 12 *C.* 10 *D.* 8 *E.* 15

Q3. A plan is drawn so that 1 cm represents 5 m. A room has an area of 12 cm² on the plan. What is its real area?

A. 60 m² *B.* 300 m² *C.* 120 m² *D.* 240 m² *E.* 600 m²

Q4. Two thirds of A is equal to four fifths of B. What is A : B in its simplest form?

A. 8 : 15 *B.* 5 : 6 *C.* 2 : 3 *D.* 6 : 5 *E.* 3 : 4

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Q5. A recipe mixes flour and sugar in the ratio 5 : 2. The table shows what four bakers used. Which baker has used the wrong proportion?

Baker	Flour	Sugar
Ann	250 g	100 g
Ben	400 g	160 g
Cara	300 g	125 g
Dan	500 g	200 g

A. Ann

B. Cara

C. Ben

D. Dan

E. None of them

Q6. A journey at a steady 80 km/h takes 1 hour 45 minutes. How long would the same journey take at a steady 70 km/h?

A. 2 hours

B. 1 hour 55 minutes

C. 2 hours 15 minutes

D. 1 hour 50 minutes

E. 2 hours 30 minutes

Q7. £500 is shared between three people. B receives twice as much as A, and C receives £50 more than B. How much does C receive?

A. £200 *B.* £180 *C.* £230 *D.* £250 *E.* £210

Q8. Two cubes have volumes in the ratio 8 : 27. What is the ratio of their surface areas?

A. 4 : 9 *B.* 2 : 3 *C.* 8 : 27 *D.* 16 : 81 *E.* 64 : 729

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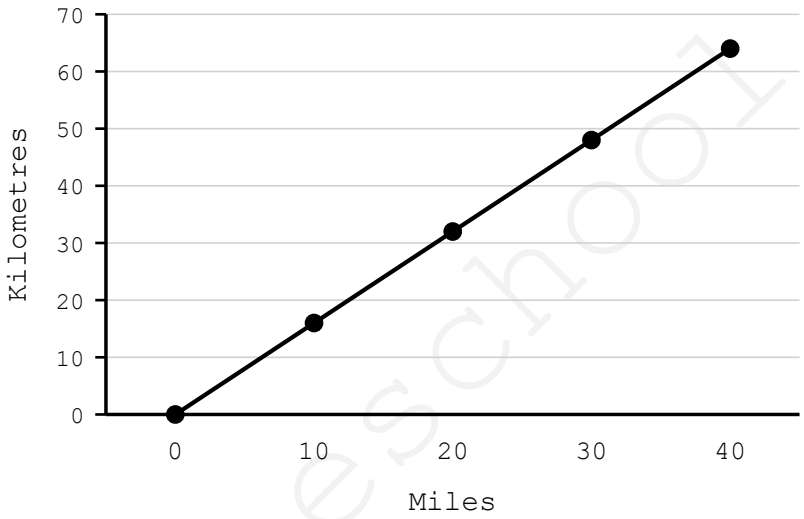
Q9. In a bag, 40% of the counters are red and the rest are blue. When 20 more red counters are added there are equal numbers of each colour. How many counters were in the bag at the start?

A. 50 *B.* 80 *C.* 120 *D.* 100 *E.* 200

Q10. The graph converts miles into kilometres. About how many kilometres is 25 miles?



A. 30 km *B.* 35 km *C.* 45 km *D.* 40 km *E.* 50 km

Q11. Shop A sells 500 g of coffee for £3. Shop B sells 400 g for £2.40 with an offer of 'buy 2 get 1 free'. Taking the offer, which shop is better value, and by how much per 100 g?

A. Shop B, by 10p

B. Shop A, by 20p

C. Shop B, by 20p

D. Shop A, by 15p

E. They are the same value

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Q12. Concrete is mixed from cement and sand in the ratio 2 : 5. A batch weighs 35 kg. How much more sand than cement does it contain?

A. 5 kg *B.* 10 kg *C.* 25 kg *D.* 20 kg *E.* 15 kg

Q13. In a car park the ratio of red cars to blue cars is 2 : 3, and the ratio of blue cars to white cars is 6 : 5. There are 24 red cars. How many white cars are there?

A. 30 *B.* 36 *C.* 20 *D.* 45 *E.* 25

Q14. A snail moves 15 cm in 2 minutes. How far would it travel in one hour at the same rate, in metres?

A. 45 m *B.* 4.5 m *C.* 0.9 m *D.* 9 m *E.* 0.45 m

Q15. Six workers take 4 days to do half of a job. How many workers would be needed to finish the other half in 2 days?

A. 24 *B.* 8 *C.* 10 *D.* 6 *E.* 12

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