

Ratio & Proportion: Hard Practice Paper 1

Q1. $A : B = 2 : 3$ and $B : C = 4 : 5$. What is $A : C$ in its simplest form?

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

Q2. In a box the ratio of red counters to blue counters is $5 : 3$. When 10 more blue counters are added, the ratio becomes $5 : 4$. How many red counters are in the box?

- A. 30 B. 40 C. 50 D. 60 E. 80

Q3. Two numbers are in the ratio $7 : 3$. When 12 is subtracted from each, the new ratio is $5 : 2$. What is the smaller of the original numbers?

- A. 84 B. 96 C. 108 D. 120 E. 252

Q4. Six workers take 10 days to complete a job. How long would 4 workers take to complete the same job, working at the same rate?

- A. 6 days B. 12 days C. 14 days D. 15 days E. 16 days

Q5. A recipe for 4 people uses 300 g of flour. Amy has 450 g of flour and plenty of everything else. What is the greatest number of whole people she can cook for?

- A. 5 B. 6 C. 7 D. 8 E. 9

Q6. £480 is shared between three people in the ratio $3 : 4 : 5$. How much more does the person with the largest share receive than the person with the smallest share?

- A. £40 B. £60 C. £80 D. £100 E. £120

Q7. On a map with a scale of 1 : 25 000, two points are 6.4 cm apart. What is the real distance between them?

- A. 0.16 km B. 1.6 km C. 2.5 km D. 16 km E. 160 km

Q8. In a class the ratio of boys to girls is 4 : 5. If 3 more boys join the class, there are equal numbers of boys and girls. How many girls are in the class?

- A. 9 B. 12 C. 15 D. 18 E. 20

Q9. An alloy is made from copper and zinc in the ratio 5 : 3. How much copper is there in 4 kg of the alloy?

- A. 1.5 kg B. 2 kg C. 2.4 kg D. 2.5 kg E. 3 kg

Q10. A train travels 240 km in 3 hours and a car travels 150 km in 2 hours 30 minutes. How much faster is the train's average speed than the car's?

- A. 10 km/h B. 15 km/h C. 20 km/h D. 25 km/h E. 30 km/h

Q11. Amy and Ben share some money in the ratio 5 : 2. Amy receives £36 more than Ben. How much money was shared altogether?

- A. £60 B. £72 C. £84 D. £96 E. £126

Q12. £270 is shared between three people in the ratio 2 : 3 : 4. The person with the middle share then gives £15 to the person with the smallest share. What is the new ratio of their amounts, in its simplest form?

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

Q13. Five cows eat all the grass in a field in 12 days. How long would the same field of grass last three cows, if each cow eats at the same rate?

- A. 7 days B. 15 days C. 18 days D. 20 days E. 24 days

Q14. A model car is made to a scale of 1 : 24. The model is 18 cm long. How long is the real car?

- A. 1.33 m B. 2.4 m C. 4.32 m D. 4.8 m E. 43.2 m

Q15. The ratio of Sam's money to Tim's money is 3 : 5. Sam has £24. Tim then spends £15. What is the new ratio of Sam's money to Tim's money?

- A. 3 : 5 B. 8 : 5 C. 24 : 25 D. 5 : 3 E. 12 : 13