Ratio & Proportion: Hard Practice Paper 4 Answers

Q#	Answer	Explanation
1	B	Make B the same in both ratios. A : B = 4 : 5 = 8 : 10, so A : B : C = 8 : 10 : 9 and A : C = 8 : 9.
2	B	There are 2 + 3 + 7 = 12 parts, so one part is £360 ÷ 12 = £30. The largest share is 7 parts = £210 and the other two are 5 parts = £150, so the difference is £60.
3	C	Each person needs 400 ÷ 5 = 80 g, so 1000 g feeds 1000 ÷ 80 = 12.5 people, which means 12 whole people.
4	B	The sack lasts 12 × 8 = 96 hen-days, so with 16 hens it lasts 96 ÷ 16 = 6 days.
5	D	The difference is 7 − 6 = 1 part, so one part is 120 pupils. Altogether there are 13 parts, which is 13 × 120 = 1560 pupils.
6	D	Perimeters are in the same ratio as the sides. Since 24 ÷ 3 = 8, the larger perimeter is 7 × 8 = 56 cm.
7	B	36 m is 3600 cm, and dividing by 72 gives 3600 ÷ 72 = 50 cm.
8	C	Divide the yen by the exchange rate: 29 000 ÷ 145 = £200.
9	C	Let one part be n, so there are 3n red and 7n blue. Then 3n + 20 = 7n, giving 4n = 20 and n = 5. At the start there were 10 parts, which is 10 × 5 = 50 counters.
10	C	At 60 km/h the journey takes 180 ÷ 60 = 3 hours and at 90 km/h it takes 180 ÷ 90 = 2 hours, so 1 hour is saved.
11	C	4 litres is 4000 ml and there are 2 + 3 = 5 parts, so one part is 800 ml. The difference is 3 − 2 = 1 part, which is 800 ml.
12	C	One part is 35 ÷ 7 = 5 coins, so there are 25 twenty-pence coins worth £5 and 10 fifty-pence coins worth £5, giving £10.00 altogether.

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13	C	One machine fills 3000 ÷ (6 × 4) = 125 bottles an hour, so 9 machines fill 1125 an hour. Then 4500 ÷ 1125 = 4 hours.
14	C	Let the son be n and the father 5n. In ten years 5n + 10 = 3(n + 10), so 5n + 10 = 3n + 30 and n = 10. The son is 10 and the father is 50, and in ten years they will be 20 and 60.
15	C	3.2 kg is 3200 g and there are 8 + 3 + 5 = 16 parts, so one part is 3200 ÷ 16 = 200 g. The butter is 5 parts, which is 5 × 200 = 1000 g.

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