Ratio & Proportion: Medium Practice Paper 7 Answers

Q#	Answer	Explanation
1	D	Every centimetre on the map stands for 20,000 cm on the ground, so the path is 3.5 × 20000 = 70000 centimetres. There are 100 cm in a metre, so that is 70,000 ÷ 100 = 700 metres.
2	B	Compare the fraction of each drink that is squash. Mix A is 3/10 squash and Mix B is 2/7. Written as decimals these are 0.3 and about 0.286, so Mix A has the greater share of squash.
3	E	The flour rises from 400 g to 1,000 g, so every amount is multiplied by 1,000 ÷ 400 = 2.5. The butter therefore becomes 150 × 2.5 = 375 grams.
4	E	One brick weighs 12.5 ÷ 5 = 2.5 kilograms. Eight of them therefore weigh 2.5 × 8 = 20 kilograms.
5	D	The job is worth 3 × 90 = 270 minutes of work by one cleaner. Shared between five people that takes 270 ÷ 5 = 54 minutes, which is less than before because more cleaners means less time.
6	E	The coins make 1 + 2 + 4 = 7 equal parts, so one part is 35 ÷ 7 = 5 coins. That gives 5 pound coins worth £5, 10 fifty-pence coins worth £5 and 20 twenty-pence coins worth £4, and 5 + 5 + 4 = 14 pounds.
7	C	The widths grow by a scale factor of 20 ÷ 8 = 2.5, and the height must grow by the same factor. So the larger photograph is 6 × 2.5 = 15 centimetres tall.
8	B	The graph is a straight line through the origin, and 1 kg costs £3. So 3.5 kg costs 3 × 3.5 = 10.5 pounds, read off halfway between the points for 3 kg and 4 kg.
9	B	The longer side grows by a scale factor of 15 ÷ 6 = 2.5. Both sides must grow by the same factor, so the shorter side becomes 4 × 2.5 = 10 centimetres.
10	D	The money makes 1 + 2 + 5 = 8 equal parts, so one part is 240 ÷ 8 = 30 pounds. The largest and smallest shares differ by 5 − 1 = 4 parts, which is 4 × 30 = 120 pounds.

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11	A	One litre carries the car 540 ÷ 45 = 12 kilometres. Thirty litres therefore carry it 12 × 30 = 360 kilometres.
12	C	Turn each price into pounds by dividing by the rate: 69 ÷ 1.15 = 60 pounds, then 65 ÷ 1.30 = 50 and 9,900 ÷ 180 = 55. The lowest is £50, in America.
13	C	If 3 squares are shaded then 12 − 3 = 9 are not, so the ratio is 3 : 9, which divides by 3 to give 1 : 3. The answer 1 : 4 compares the shaded part with the whole rectangle instead.
14	A	Over the same distance, the car that takes less time must be going faster, so the speeds are the other way round from the times. The ratio of speeds is therefore 4 : 3.
15	A	Dividing by 6 finds the flour for one person, and multiplying by 9 then scales it up to nine people. The answer must be larger than 240 g, which rules out dividing by the larger number.

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