

Ratio & Proportion: Hard Practice Paper 3 Answers

Q#	Answer	Explanation
1	B	Make B the same in both ratios. Multiplying $A : B = 5 : 2$ by 3 gives $15 : 6$, which matches the 6 in $B : C = 6 : 5$, so $A : B : C = 15 : 6 : 5$.
2	C	There are $3 + 4 + 5 = 12$ parts, so one part is $£924 \div 12 = £77$. The middle share is 4 parts, which is $4 \times £77 = £308$.
3	B	The job takes $3 \times 40 = 120$ tap-minutes, so five taps take $120 \div 5 = 24$ minutes.
4	C	100 g of sugar is $100 \div 2 = 50$ g for one part, so the flour must be $5 \times 50 = 250$ g. The remaining flour cannot be used.
5	D	The difference is $9 - 4 = 5$ parts, so 5 parts = 35 and one part = 7. The sum is 13 parts, which is $13 \times 7 = 91$.
6	A	Areas are in the ratio of the squares of the lengths. Since $3^2 = 9$, the lengths are in the ratio $1 : 3$.
7	A	If 20% is juice then 80% is water, so the ratio is $20 : 80$. Dividing both parts by 20 gives $1 : 4$.
8	D	The car travels $480 \div 40 = 12$ km on each litre, so on 55 litres it travels $55 \times 12 = 660$ km.
9	D	One part is $252 \div 9 = 28$ people. Altogether there are $9 + 5 = 14$ parts, which is $14 \times 28 = 392$ people.
10	D	Let one part be n , so Tom has $5n$ and Sara has $3n$. Then $2(5n - 40) = 3 \times 3n$, so $10n - 80 = 9n$ and $n = 80$. Sara has $3 \times £80 = £240$, and checking: $£360 : £240 = 3 : 2$.
11	B	Per 100 g the costs are $115 \div 2.5 = 46p$, $176 \div 4 = 44p$ and $460 \div 10 = 46p$. The 400 g pack is cheapest per 100 g, so it is the best value.
12	E	The angles add up to 360° and there are $2 + 3 + 4 + 6 = 15$ parts, so one part is $360 \div 15 = 24^\circ$. The largest angle is $6 \times 24 = 144^\circ$.

13	C	The whole job is $8 \times 15 = 120$ person-days. In 5 days they complete $8 \times 5 = 40$ person-days, leaving 80. With 4 people that takes $80 \div 4 = 20$ more days.
14	C	The real distance is $9 \times 200\,000 = 1\,800\,000$ cm. Dividing by 100 000 gives 18 km.
15	B	One part is $5 \div 5 = 1$ litre, so there are 3 litres of white and 2 litres of blue. To make the amounts equal, the blue must reach 3 litres, so $3 - 2 = 1$ litre is added.