

Coordinates & Graphs: Hard Practice Paper 8 Answers

Q#	Answer	Explanation
1	D	The highest the line reaches is 30 on the distance axis, and it stays there between 2 hours and 3 hours. So the furthest Priya got from home was 30 km.
2	B	While she is stopped her distance from home does not change, so the line is flat. That flat section runs from 2 hours to 3 hours, so she stopped for $3 - 2 = 1$ hour.
3	C	The journey home is the last part of the graph, where she covers 30 km between 3 hours and 5 hours, which is 2 hours of riding. Her speed is $30 \div 2 = 15$ km/h.
4	D	The graph shows how far she is from home, not how far she has ridden. She goes 30 km out and then the same 30 km back, so she cycles $30 + 30 = 60$ km in total, even though she finishes where she started.
5	C	Average speed uses the whole distance and the whole time, waiting included. The distance is $150 + 90 = 240$ km and the time is $2 + 1 + 2 = 5$ hours, so the average speed is $240 \div 5 = 48$ km/h.
6	B	Reading the graph, 200 litres take 8 minutes, so the tap gives $200 \div 8 = 25$ litres every minute. To collect 350 litres takes $350 \div 25 = 14$ minutes.
7	C	Near the bottom the vase is wide, so a lot of water is needed to raise the level a little and the depth grows slowly. Higher up it is narrower, so the same amount of water raises the level more, and the depth climbs faster. A graph that starts shallow and keeps getting steeper is the answer.
8	E	A straight line through the origin means two things: buying none costs nothing, and each extra litre adds the same amount. Petrol works exactly like that. The taxi fare starts above the origin because of the fixed charge, and the other three do not climb at a steady rate.

9	D	Points A, B, C and E all have an up value 1 more than their across value, so they sit on the line $y = x + 1$. Point D is at (6, 8), but that line would put it at (6, 7), so D is the odd one out.
10	A	Cutting off everything below 200 removes the part of each bar or point that all the months share, so only the differences are left to fill the height of the graph. A small real change then takes up a lot of space and looks far more dramatic than it is.
11	D	When x is 3, y is $3 \times 3 = 9$, and when x is 6, y is $6 \times 6 = 36$. Since $36 \div 9 = 4$, the value of y becomes 4 times bigger, not twice as big. Doubling x always multiplies x^2 by 4.
12	C	The graph stops at 10 kg, so the rate has to be used instead of reading it off. Since 5 kg is 11 pounds, 25 kg is five times as much, and $11 \times 5 = 55$ pounds.
13	A	A steeper line means more distance is covered in the same amount of time, and covering more ground in the same time is what travelling faster means. A flat line would mean not moving at all.
14	B	In 20 minutes the phone gains 30%, so in 1 minute it gains $30 \div 20 = 1.5$ per cent. To reach 75% takes $75 \div 1.5 = 50$ minutes.
15	C	From the first point to the fifth there are 4 steps, not 5. Across, that is $4 \times 3 = 12$, so the across value is $2 + 12 = 14$. Up, it is $4 \times 2 = 8$, so the up value is $1 + 8 = 9$, giving (14, 9).