

Coordinates & Graphs: Medium Practice Paper 8 Answers

Q#	Answer	Explanation
1	B	The centre is halfway across and halfway up. Across, the square runs from -2 to 4, and halfway between them is 1. Up, it runs from -1 to 5, and halfway between those is 2. So the centre is (1, 2).
2	E	The across value is left alone and only the up value changes sign, so a point 3 above the axis lands 3 below it, staying in the same column. That is exactly what a reflection in the x-axis does.
3	D	Doubling every coordinate moves the corners to (2, 2), (6, 2) and (2, 8). The new base runs from 2 to 6, so it is 4 squares, and the new height runs from 2 to 8, so it is 6 squares. Half the base times the height gives $4 \times 6 = 24$, and then $24 \div 2 = 12$ squares.
4	B	A mirror line sits exactly halfway between a point and its image. The corner at (1, 1) matches the corner at (7, 1), and halfway between 1 and 7 is 4. The line is upright, so its equation is $x = 4$.
5	D	The bottom side runs from -3 to 5 across, a length of 8 units, and the side runs from -2 up to 4, a length of 6 units. The perimeter is $8 + 6 + 8 + 6 = 28$ units.
6	B	Take the two across values and find the middle: -4 and 6 are 10 apart, and 5 to the right of -4 is 1. Then the two up values: halfway between -1 and 3 is 1. So the midpoint is (1, 1).
7	A	The point (0, 6) lies straight up the y-axis, 6 units from the origin. The point (5, 0) is only 5 units away, and (3, 4) and (4, 3) are each 5 units away, since they sit on a 3, 4, 5 triangle. The point (2, 5) is a little under 5.4 units away, so (0, 6) is the furthest.
8	A	Deal with the two directions separately. Across, 4 right then 2 left leaves $4 - 2 = 2$ squares to the right. Up and down, 1 down then 5 up leaves $5 - 1 = 4$ squares up. So the single move is 2 right and 4 up.

9	B	The base lies along the grid from 1 to 7, so it is 6 squares long, and the top corner is 4 squares above the base. Half the base times the height gives $6 \times 4 = 24$, and then $24 \div 2 = 12$ squares. The triangle leaning to one side makes no difference.
10	A	The bottom side and the top side are both 4 units long and both flat, so they are equal and parallel. The two slanting sides are equal and parallel too, but the corners are not right angles, so the shape is a parallelogram rather than a rectangle.
11	A	Reflecting in the x-axis changes the sign of the up value, taking (4, 3) to (4, -3). Reflecting that in the y-axis changes the sign of the across value, giving (-4, -3). The two reflections together have the same effect as a half turn about the origin.
12	D	The centre is the midpoint of the diagonal, so it is the same distance from both ends. Going from (1, 1) to (3, 3) is 2 across and 2 up, so carrying on the same amount again gives (5, 5).
13	C	The other two corners are (5, 1) and (1, 5), so each side runs from 1 to 5, which is 4 units. The area is $4 \times 4 = 16$ squares. The distance between the two given corners is the diagonal, not a side.
14	B	Reflecting in the y-axis changes the sign of the across value, so (-2, 5) becomes (2, 5). Moving 3 squares down takes 3 off the up value: $5 - 3 = 2$. The final point is (2, 2).
15	C	Both points are 3 up, so the line joining them is flat and only the across values matter. Counting from -6 up to 0 is 6 squares and then on to 2 is 2 more, giving $6 + 2 = 8$ squares.