Coordinates & Graphs: Hard Practice Paper 4 Answers

Q#	Answer	Explanation
1	B	The base joins (1, 1) to (7, 1), so it is 7 − 1 = 6 squares long, and the third vertex is 5 squares above it, since 6 − 1 = 5. Half of base times height gives 6 × 5 ÷ 2 = 15 squares.
2	B	The two parallel sides are 7 squares and 3 squares long, and they are 4 squares apart. Adding the parallel sides gives 7 + 3 = 10, half of that is 5, and 5 × 4 = 20 squares.
3	C	Draw the smallest upright square around it, which is 5 by 5 and has area 5 × 5 = 25. That leaves four right-angled triangles in the corners, each 4 squares by 1 square, so each has area 4 × 1 ÷ 2 = 2 and the four together are 8. The tilted square is 25 − 8 = 17 squares.
4	B	Split it into two rectangles. The bottom one is 5 squares by 2 squares, giving 5 × 2 = 10, and the piece above the step is 2 squares by 2 squares, giving 2 × 2 = 4. Altogether 10 + 4 = 14 squares.
5	A	The two sides on the axes are at right angles, so they can be used as the base and the height: 6 × 4 ÷ 2 = 12 squares.
6	E	The rectangle runs from −3 to 5 across, which is 8 squares, and from −1 to 4 up, which is 5 squares. Its area is 8 × 5 = 40 squares.
7	D	The diagonals of a kite cross at right angles, and here they are 7 squares and 4 squares long. The area is half of the two diagonals multiplied: 7 × 4 ÷ 2 = 14 squares.
8	C	The base is 10 − 2 = 8 squares long, and the area is half of base times height, so half of 8 times the height must be 20. Four times the height is 20, so the height is 5. The base sits at y = 1, so k = 1 + 5 = 6.
9	C	The rectangle is 8 squares across and 6 squares up, so a diagonal is the slanted side of a right-angled triangle with those sides. Since 8 × 8 = 64 and 6 × 6 = 36, the square on the diagonal is 64 + 36 = 100, and 10 × 10 = 100, so the diagonal is 10 units.

10	D	A square of area 36 has sides of 6, because 6 × 6 = 36. Going 6 along each axis puts the opposite corner at (6, 6).
11	A	The two sides along the grid lines are 4 units and 3 units. The slanted side closes a 3 by 4 right-angled triangle, so it is 5 units, because 16 + 9 = 25 and 5 × 5 = 25. The perimeter is 4 + 3 + 5 = 12 units.
12	E	Triangle P has area 8 × 3 ÷ 2 = 12 squares and triangle Q has area 4 × 6 ÷ 2 = 12 squares, so the two are equal.
13	D	Neither a reflection nor a translation changes the size of a shape, so the area stays at 18 squares however far the shape is moved.
14	A	The side given is 8 − 2 = 6 squares long, so the other side must be 24 ÷ 6 = 4 squares. Going 4 up from (2, 3) reaches (2, 7).
15	C	The rectangle runs from −4 to 3 across, which is 7 squares, and from −2 to 2 up, which is 4 squares. The perimeter is 7 + 4 + 7 + 4 = 22 units.