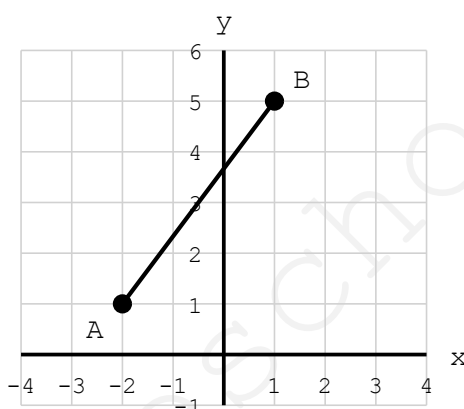


Coordinates & Graphs: Hard Practice Paper 7

Q1. A is the point $(1, 3)$ and B is the point $(9, 3)$. Point C lies on the line AB, and AC is three times as long as CB. What are the coordinates of C?

- A. $(3, 3)$ B. $(5, 3)$ C. $(6, 3)$ D. $(7, 3)$ E. $(8, 3)$

Q2. How long is the straight line joining $(-2, 1)$ and $(1, 5)$?



- A. 3 units B. 4 units C. 5 units D. 7 units E. 12 units

Q3. The point $(3, 2)$ is rotated a quarter turn clockwise about the point $(3, 4)$. Where does it land?

- A. $(1, 2)$ B. $(1, 4)$ C. $(3, 6)$ D. $(5, 2)$ E. $(5, 4)$

Q4. A triangle has vertices at $(1, 2)$, $(9, 2)$ and $(5, k)$, where k is greater than 2. Its area is 20 squares. What is the value of k ?

- A. 5 B. 6 C. 7 D. 9 E. 10

Q5. A triangle has vertices at $(0, 0)$, $(6, 0)$ and $(6, 8)$. What is its perimeter, in units?

- A. 24 units B. 26 units C. 28 units D. 34 units E. 48 units

Q6. Two vertices of a right-angled triangle are $(1, 1)$ and $(5, 1)$. Which third vertex would put the right angle at $(5, 1)$?

- A. $(1, 4)$ B. $(2, 5)$ C. $(3, 4)$ D. $(5, 4)$ E. $(7, 3)$

Q7. Which of these points is the same distance from $(2, 6)$ as it is from $(2, 0)$?

- A. $(3, 4)$ B. $(4, 5)$ C. $(5, 2)$ D. $(6, 1)$ E. $(5, 3)$

Q8. A shape has an area of 15 squares. It is reflected in the x -axis, and then every coordinate of the image is multiplied by 2. What is the area of the final shape, in squares?

- A. 15 B. 30 C. 45 D. 60 E. 225

Q9. Three vertices of a parallelogram are $(1, 2)$, $(5, 2)$ and $(7, 5)$. The fourth vertex lies to the left of $(7, 5)$. What are its coordinates?

- A. $(2, 5)$ B. $(3, 4)$ C. $(3, 5)$ D. $(4, 5)$ E. $(6, 5)$

Q10. A rectangle has corners at $(1, 1)$, $(5, 1)$, $(5, 4)$ and $(1, 4)$. A straight line is drawn from $(1, 1)$ to $(5, 4)$. What fraction of the rectangle lies below that line?

- A. One quarter
B. One third
C. One half
D. Two thirds
E. Three quarters

Q11. A rectangle has corners at $(0, 0)$, $(6, 0)$, $(6, 4)$ and $(0, 4)$. Which is the larger number: the number of units in its perimeter or the number of squares in its area?

- A. The perimeter, by 2
- B. The perimeter, by 4
- C. The area, by 4
- D. The area, by 6
- E. They are equal

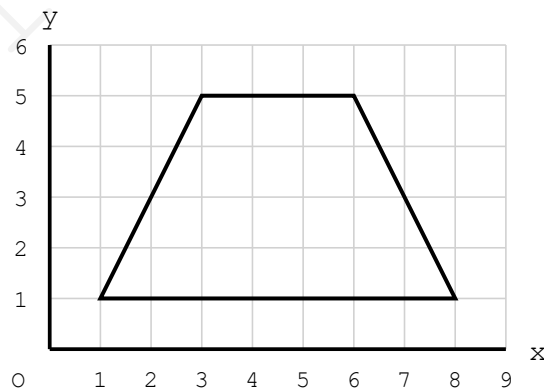
Q12. The points $(1, 4)$, $(3, 10)$ and $(5, k)$ all lie on the same straight line. What is the value of k ?

- A. 12
- B. 13
- C. 14
- D. 16
- E. 20

Q13. A square has corners at $(2, 2)$, $(6, 2)$, $(6, 6)$ and $(2, 6)$. It is translated so that its centre lands on the origin. Where does the corner $(2, 2)$ end up?

- A. $(-4, -4)$
- B. $(-2, -2)$
- C. $(0, 0)$
- D. $(2, 2)$
- E. $(4, 4)$

Q14. What is the area of this shape, in squares?



- A. 16
- B. 18
- C. 20
- D. 22
- E. 28

Q15. A rectangle has an area of 24 squares, and its sides run along the grid lines. Two of its corners are $(1, 2)$ and $(7, 2)$. What are the possible up values of the other two corners?

- A. 6 only B. -2 only C. 4 or 0 D. 6 or -2 E. 8 or -4

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