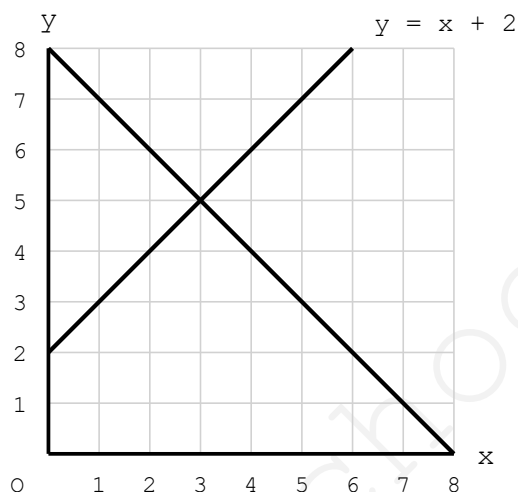


Coordinates & Graphs: Hard Practice Paper 6

Q1. Two lines are drawn on the grid. One is $y = x + 2$ and the other, which falls from left to right, is $y = 8 - x$. For which values of x is the line $y = x + 2$ the higher of the two?



- A. $x < 3$ B. $x > 3$ C. $x < 5$ D. $x > 5$ E. $x = 3$

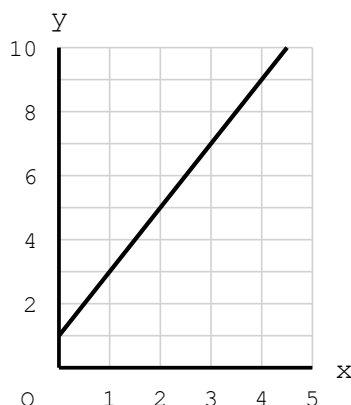
Q2. A straight line passes through $(0, -3)$ and $(2, 1)$. What is its equation?

- A. $y = 2x - 3$
 B. $y = 2x + 3$
 C. $y = x - 3$
 D. $y = 3x - 2$
 E. $y = 4x - 3$

Q3. Where do the lines $y = 4x - 1$ and $y = x + 8$ cross?

- A. $(2, 7)$ B. $(3, 8)$ C. $(3, 11)$ D. $(4, 12)$ E. $(9, 17)$

Q4. The line drawn on this grid is continued beyond the edge of the grid. Which of these points would lie on it?



- A. (8, 16) B. (9, 18) C. (10, 21) D. (12, 23) E. (15, 30)

Q5. A line is parallel to $y = 5x + 2$ and passes through the point (1, 9). What is its equation?

- A. $y = 5x + 4$
 B. $y = 5x + 9$
 C. $y = 5x - 4$
 D. $y = 9x + 5$
 E. $y = x + 9$

Q6. A straight line crosses the y-axis at (0, 8) and the x-axis at (4, 0). What is its equation?

- A. $y = 8 - 2x$
 B. $y = 2x + 8$
 C. $y = 8 - 4x$
 D. $y = 4 - 2x$
 E. $y = 2x - 8$

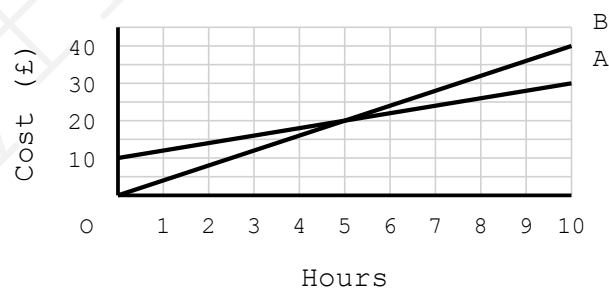
Q7. Does the point (30, 92) lie on the line $y = 3x + 2$?

- A. No, the rule gives 90
- B. No, the rule gives 94
- C. No, the rule gives 32
- D. It cannot be decided without drawing the graph
- E. Yes, because the rule gives 92

Q8. A straight line passes through (0, 1) and (6, 4). How far does the line climb for each 1 square it moves across?

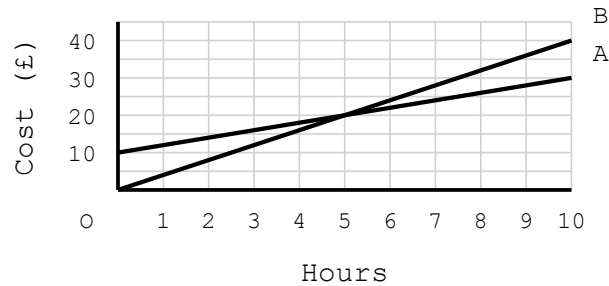
- A. $\frac{1}{4}$ of a square
- B. $\frac{1}{2}$ a square
- C. 2 squares
- D. 3 squares
- E. 6 squares

Q9. The graph compares two hire plans. Plan A charges £10 plus £2 an hour, and Plan B charges £4 an hour with nothing to pay up front. For how many hours is Plan B the cheaper of the two?



- A. Fewer than 3 hours
- B. Fewer than 4 hours
- C. Fewer than 5 hours
- D. More than 5 hours
- E. More than 6 hours

Q10. Use the same hire plan graph. What is the cost at the moment when the two plans charge exactly the same?



- A. £10 B. £15 C. £20 D. £25 E. £30

Q11. The points (2, 3) and (6, 7) both lie on the line $y = x + 1$. What are the coordinates of the midpoint of the part of the line between them?

- A. (4, 4) B. (4, 5) C. (4, 6) D. (5, 5) E. (8, 10)

Q12. This table follows one rule. Which equation fits it?

x: 1, 2, 3, 4
y: 1, 4, 9, 16

- A. $y = x^2$
B. $y = 4x$
C. $y = 3x - 2$
D. $y = 2x + 1$
E. $y = x + 3$

Q13. Which of these sets of three points does NOT lie on one straight line?

- A. (1, 2), (2, 4), (3, 6)
B. (0, 5), (2, 5), (7, 5)
C. (1, 1), (3, 5), (5, 9)
D. (0, 0), (3, 3), (6, 7)
E. (2, 1), (4, 4), (6, 7)

Q14. The value of a van is drawn against its age as a straight line. It is worth £12,000 when new and £2,000 when it is 5 years old. How much value does it lose each year?

- A. £1,000 B. £1,500 C. £2,000 D. £2,400 E. £5,000

Q15. A line falls by 3 for every 1 square it moves across, and it crosses the y-axis at (0, 7). What is its equation?

- A. $y = 7 - 3x$
B. $y = 3x + 7$
C. $y = 3 - 7x$
D. $y = 7x - 3$
E. $y = 3x - 7$