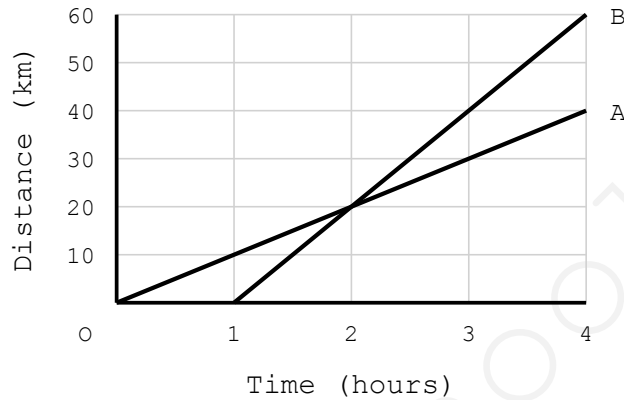


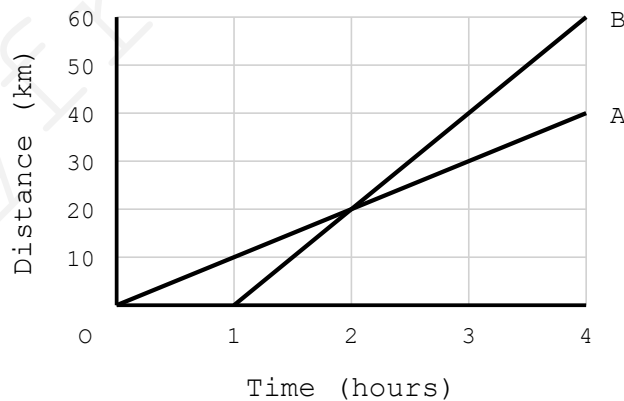
Coordinates & Graphs: Hard Practice Paper 5

Q1. The graph shows Anya's journey, line A, and Ben's journey along the same road, line B. How long after Anya set off did Ben catch her up?



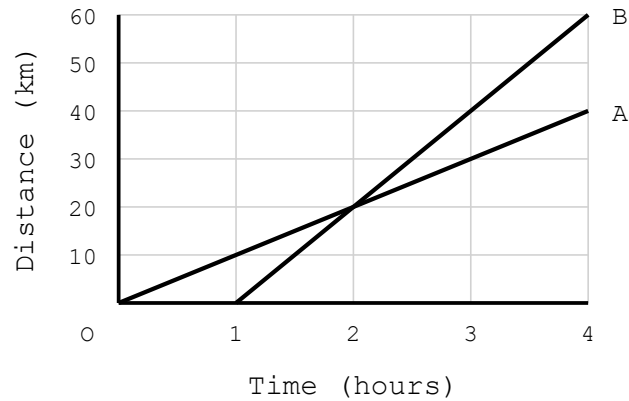
- A. 1 hour B. 1.5 hours C. 2 hours D. 2.5 hours E. 3 hours

Q2. Use the journey graph. How far from the start were Anya and Ben when Ben caught her up?



- A. 20 km B. 25 km C. 30 km D. 40 km E. 60 km

Q3. Use the journey graph. What was Ben's speed?



- A. 10 km/h B. 15 km/h C. 20 km/h D. 30 km/h E. 60 km/h

Q4. Use the journey graph. How much faster was Ben travelling than Anya?



- A. 5 km/h faster
 B. 10 km/h faster
 C. 15 km/h faster
 D. 20 km/h faster
 E. 30 km/h faster

Q5. A cyclist rides 45 km in 3 hours, including a 30 minute rest. What is her average speed for the whole journey, including the rest?

- A. 9 km/h B. 12 km/h C. 15 km/h D. 18 km/h E. 22.5 km/h

Q6. A bank changes pounds into euros at €1.20 for every £1. Which point would lie on the graph of euros against pounds?

- A. (15, 16.20)
B. (15, 12)
C. (20, 22)
D. (15, 18)
E. (20, 25)

Q7. On the graph of $y = 4x$, the value of x is doubled from 3 to 6. What happens to y ?

- A. It goes up by 4
B. It doubles as well
C. It stays the same
D. It goes up by 2
E. It is halved

Q8. The points (1, 3), (2, 6), (3, 11) and (4, 18) are plotted and joined. Which of these is true?

- A. The points lie on a straight line
B. The rule must be $y = 3x$
C. The points lie on the line $y = x + 2$
D. The points all lie on the y -axis
E. The points do not lie on a straight line

Q9. A square has two opposite corners at $(1, 2)$ and $(7, 8)$. A second square has two opposite corners at $(3, 4)$ and $(9, 10)$. What is true of their centres?

- A. They are the same point
- B. The second centre is 6 right and 6 up from the first
- C. The first centre is at the origin
- D. The second centre is 2 right and 2 up from the first
- E. The centres both lie on the y-axis

Q10. Water is poured into a tall thin vase at a steady rate. What does the graph of the depth of water against time look like?

- A. A flat line
- B. A line sloping down
- C. A line that rises then falls
- D. A line that starts above zero
- E. A straight line sloping up

Q11. A straight line passes through $(2, 5)$ and $(6, 13)$. Which point also lies on it?

- A. $(4, 8)$
- B. $(8, 16)$
- C. $(10, 20)$
- D. $(3, 6)$
- E. $(4, 9)$

Q12. A shop draws a graph of its sales but starts the vertical axis at 100 instead of 0. What is the risk?

- A. Small differences look much bigger than they are
- B. The graph cannot be drawn
- C. The sales figures change
- D. The graph must be a curve
- E. The horizontal axis becomes wrong

Q13. The corners of a rectangle are $(0, 0)$, $(12, 0)$, $(12, 5)$ and $(0, 5)$. A straight path runs from $(0, 0)$ to $(12, 5)$. How long is the path?

- A. 12 units B. 13 units C. 15 units D. 17 units E. 60 units

Q14. A pattern of points starts at $(1, 2)$ and each new point is 2 further across and 3 further up than the one before. What are the coordinates of the fifth point?

- A. $(9, 14)$ B. $(11, 17)$ C. $(9, 12)$ D. $(10, 15)$ E. $(8, 12)$

Q15. A phone is charged from empty. After 20 minutes it is 30% charged, and it charges steadily. If the graph is a straight line through the origin, when will it be fully charged?

- A. After 50 minutes
B. After 60 minutes
C. About 67 minutes
D. After 90 minutes
E. After 100 minutes