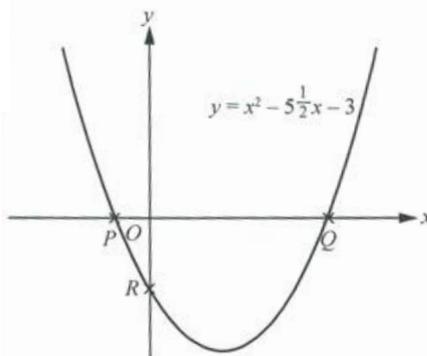


Class Test 3


Answer all questions. Show your working clearly.

1. The equation of the curve is $y = x^2 - 5\frac{1}{2}x - 3$.



- (a) Find the coordinates of P , Q and R . [2]
 (b) The coordinates of a point on the curve are $(2n, -9)$. Find possible values of n . [2]
 (c) State the equation of the line of symmetry. [2]
2. Solve the equation $(3m - 1)(m - 8) + 6m - 22 = 0$. [1]
 Hence, solve $(3n + \frac{7}{2})(n - \frac{13}{2}) + 6(n + \frac{3}{2}) - 22 = 0$. [1]
3. Solve the following equations.
 (a) $(6p - 2)^2 - 45 = \frac{1}{3}(6p - 1)(3p - 3)$ [2]
 (b) $(x - 5)^2 = x - 5$ [2]
4. A toy car travels at 2.4 m/s for $(t + 2)(2t - 3)$ seconds and reduces its speed to 1.6 m/s for $3t(t - 1)$ seconds.
 (a) Find an expression for the total distance travelled, in terms of t . [2]
 (b) If the total distance is 316.8 m, find the value of t , given that t is a whole number. [1]
 (c) Hence, find the total time taken. [1]

Chapter 5 • Quadratic Equations and Graphs

5. A ball drops from a height and falls towards the ground. The distance, D , from the ground is $(x - 3.5)^2$, where x is the time, in seconds and D is in metres.
- (a) On a sheet of graph paper, using a scale of 2 cm to 1 unit on the horizontal axis and 1 cm to 1 unit on the vertical axis, draw the graph of D against x , for $0 \leq x \leq 6$. [3]
- (b) (i) State the height from which the ball is dropped. [1]
 (ii) Find the time at which the ball hit the ground. [1]
- (c) By drawing a suitable line, solve the equation $(x - 3.5)^2 = 2\frac{1}{4}$. [2]

6. Solve the following equations.
- (a) $2x^2 + (2x + 1)(x - 4) + 3 = -4$ [2]
 (b) $(4x + 2)(x - 1) + 2x = -1$ [2]

7. Doris cycles from town A to town B at the speed of $(5s + 1)$ km/h for 36 min and she cycles from town B to town C at the speed of $(s^2 + 2)$ km/h for $\frac{1}{2}$ h.
- (a) Given that she cycled a total distance of 15.1 km, find an expression in terms of s . [2]
 (b) Find the distance between town A and town B . [2]

8. The equation of a graph is $y = -x^2 + px + \frac{5}{2}$.

x	-4	-3	-1	2	3
y			3		

- (a) (i) Find the value of p . [1]
 (ii) Copy and complete the table above. [1]
- (b) On a sheet of graph paper, using a scale of 2 cm to 1 unit on the x -axis and 1 cm to 1 unit on the y -axis, draw the graph of $y = -x^2 + px + \frac{5}{2}$ for $-4 \leq x \leq 3$. [3]
- (c) (i) State the equation of the line of symmetry. [1]
 (ii) Find the value of y when $x = \frac{1}{2}$. [1]
- (d) By drawing a suitable line on the graph, solve the equation $-x^2 - \frac{3}{2}x = 0$. [2]