

Show all working – Calculator allowed unless stated.

1. Write down the equation of the graphs below that have the forms



2. a)	Factorise $x^2 - 4x - 21$	(2)
b)	Hence write down the roots of the equation $x^2 - 4x - 21 = 0$	(1)

- c) Find the coordinates of the turning point and state its nature. (3)
- d) Sketch the graph, showing clearly the roots, y-intercept & turning point.
- **3**. The equation of the parabola shown is $y = (x 2)^2 9$
 - a) State the coordinates of the turning point
 - **b**) Find the coordinates of C
 - c) A is the point (-1, 0), state the coordinates of B
- **4.** A quadratic function has the equation $y = x^2 4x 12$
 - **a**) Write the equation in the form $y = (x + p)^2 + q$
 - b) State the coordinates and nature of the turning point.
- 5. Find the points of intersection between the curve $y = x^2 + 4x 2$ and the line y = 3 as shown in the diagram opposite.





Total Marks: 25

<u>Marks</u>

(2)