MEI Core 1 Completing Square Questions Jan 05 - May 09

1 Express $x^2 - 6x$ in the form $(x - a)^2 - b$.

Sketch the graph of $y = x^2 - 6x$, giving the coordinates of its minimum point and the intersections with the axes. [5]

2 (i) Express $x^2 + 6x + 5$ in the form $(x + a)^2 + b$. **[3]**

(ii) Write down the coordinates of the minimum point on the graph of $y = x^2 + 6x + 5$. **[2]**

3 (i) Express $x^2 - 6x + 2$ in the form $(x - a)^2 - b$. [3]

(ii) State the coordinates of the turning point on the graph of $y = x^2 - 6x + 2$. [2]

4 (i) Write $x^2 - 5x + 8$ in the form $(x - a)^2 + b$ and hence show that $x^2 - 5x + 8 > 0$ for all values of x. [4]

(ii) Sketch the graph of $y = x^2 - 5x + 8$, showing the coordinates of the turning point. [3]

5 (i) Write $x^2 - 7x + 6$ in the form $(x - a)^2 + b$. [3]

(ii) State the coordinates of the minimum point on the graph of $y = x^2 - 7x + 6$. [2]