1 A curve has the equation $y = x^2 - 6x + 17$

The turning point of the curve is at $(a, 8)$

1 (a) By completing the square, or otherwise, work out the value of a.

[2 marks]

Answer _____

1 (b) The turning point of the curve $y = x^2 + 4x + b$ also has y-coordinate 8

Work out the value of b.

[2 marks]

Answer _____

2 The equation of a curve is $y = x^2 + 14x + 52$

By completing the square, work out the coordinates of the turning point.

You **must** show your working.

[3 marks]

Answer (_____ , _____)

3 The equation of a curve is $y = x^2 - 18x + 70$

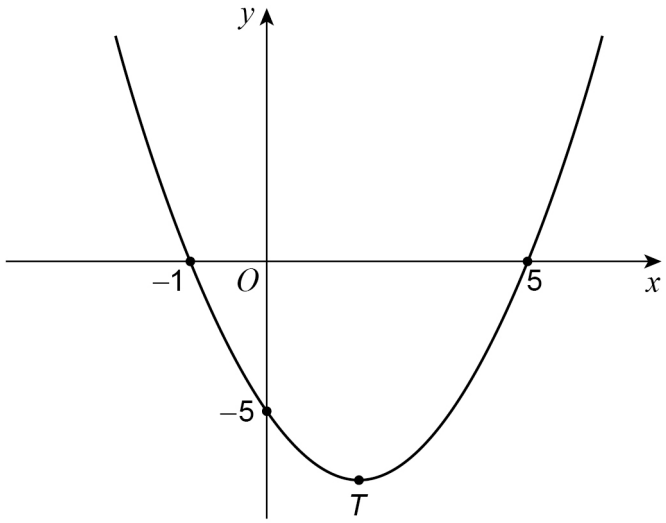
By completing the square, work out the coordinates of the turning point.

You **must** show your working.

[3 marks]

Answer (_____ , _____)

4 Here is a sketch of the curve $y = x^2 - 4x - 5$



4 (a) Work out the coordinates of *T*, the turning point of the curve.

[2 marks]

Answer (_____ , _____)

5 Express $x^2 - 6x - 15$ in the form $(x - a)^2 - b$ where a and b are integers.

[2 marks]

Answer _____

6 Write $2x^2 - 12x + 7$ in the form $d(x + e)^2 + f$
where d, e and f are integers.

[3 marks]

Answer _____