

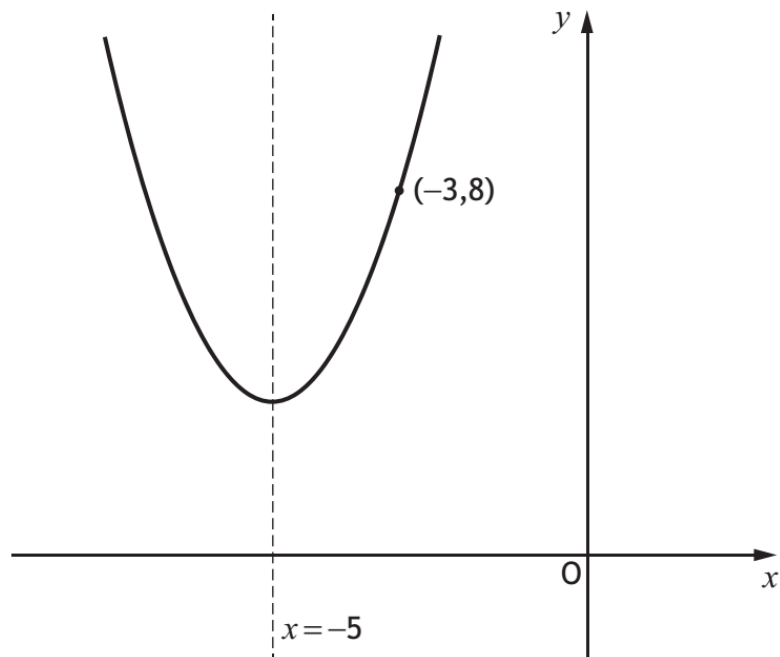
Completed Square Form

YEAR	PAPER	QUESTION	
2014	1	Express $x^2 - 14x + 44$ in the form $(x - a)^2 + b$.	2
2015	1	<p>The graph below shows part of the parabola with equation of the form</p> $y = (x + a)^2 + b.$ <div style="text-align: center;"> </div> <p>The minimum turning point $(2, -4)$ is shown in the diagram.</p> <p>(a) State the values of</p> <p style="margin-left: 40px;">(i) a 1</p> <p style="margin-left: 40px;">(ii) b. 1</p> <p>(b) Write down the equation of the axis of symmetry of the graph. 1</p>	
2016	1	<p>Sketch the graph of $y = (x - 3)^2 + 1$.</p> <p>On your sketch, show clearly the coordinates of the turning point and the point of intersection with the y-axis.</p>	3
2016	2	Express $x^2 + 8x - 7$ in the form $(x + a)^2 + b$.	2

2017

1

The graph below shows a parabola with equation of the form $y = (x + a)^2 + b$.



The equation of the axis of symmetry of the parabola is $x = -5$.

(a) State the value of a .

1

The point $(-3, 8)$ lies on the parabola.

(b) Calculate the value of b .

2

2018

1

(a) (i) Express $x^2 - 6x - 81$ in the form $(x - p)^2 + q$.

2

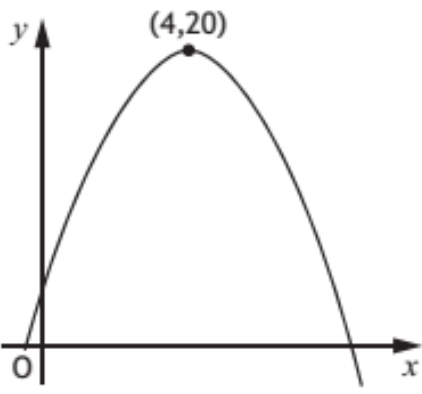
(ii) Hence state the equation of the axis of symmetry of the graph of $y = x^2 - 6x - 81$.

1

(b) The roots of the equation $x^2 - 6x - 81 = 0$ can be expressed in the form $x = d \pm d\sqrt{e}$.

Find, algebraically, the values of d and e .

4

2019	1	<p>The graph shows a parabola.</p>  <p>The maximum turning point has coordinates (4,20) as shown in the diagram.</p> <p>(a) Write down the equation of the axis of symmetry of the graph. 1</p> <p>The equation of the parabola is of the form $y = b - (x + a)^2$.</p> <p>(b) State the values of</p> <p style="padding-left: 40px;">(i) a 1</p> <p style="padding-left: 40px;">(ii) b. 1</p>
2019	2	<p>Express $x^2 + 10x - 15$ in the form $(x + p)^2 + q$. 2</p>
2022	1	<p>(a) Express $x^2 + 8x + 15$ in the form $(x + a)^2 + b$. 2</p> <p>(b) Hence, or otherwise, state the coordinates of the turning point of the graph of $f(x) = x^2 + 8x + 15$. 1</p>