Name:_____

GCSE (1 - 9) Completing the Square	Solutions:

These questions are compiled from released Pearson Edexcel GCSE maths exam papers

They contain exam questions from up until the ***November 2023*** exam series

More recent exam papers do exist but are withheld for mock exams

As new exam papers are released these worksheets will gradually be updated

The **most current** version of these worksheets will always be available at: kennethstafford.co.uk

Past Papers:	**Similar Worksheets:**
Solutions:	**This worksheet:**

1

Write $x^2 + 6x - 7$ in the form $(x + a)^2 + b$ where a and b are integers.

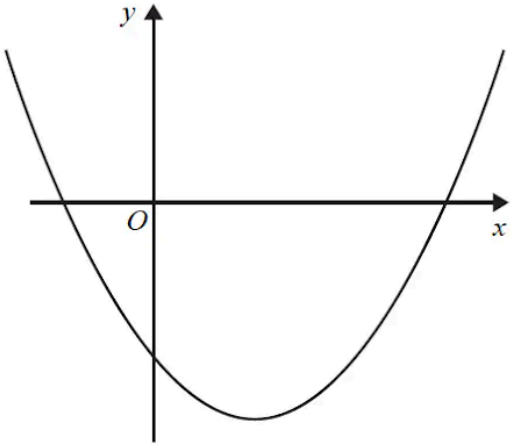
.....

(Total for Question 13 is 2 marks)

[Edexcel, GCSE, Autumn 2017, Paper 3H, Q13]

2

Here is a sketch of a curve.



The equation of the curve is $y = x^2 + ax + b$ where a and b are integers.

The points $(0, -5)$ and $(5, 0)$ lie on the curve.

Find the coordinates of the turning point of the curve.

(..... , ...)

(Total for Question 17 is 4 marks)

[Edexcel, GCSE, Autumn 2018, Paper 1H, Q17]

3

Given that $x^2 - 6x + 1 = (x - a)^2 - b$ for all values of x,

(i) find the value of a and the value of b.

$a =$ .....

$b =$ .....

(2)

(ii) Hence write down the coordinates of the turning point on the graph of $y = x^2 - 6x + 1$

(..... , ...)

(1)

(Total for Question 19 is 3 marks)

[Edexcel, GCSE, Summer 2019, Paper 1H, Q19]

4

Sketch the graph of

$$y = 2x^2 - 8x - 5$$

showing the coordinates of the turning point and the exact coordinates of any intercepts with the coordinate axes.

(Total for Question 21 is 5 marks)

[Edexcel, GCSE, Autumn 2019, Paper 1H, Q21]

5

Write down the coordinates of the turning point on the graph of $y = (x + 12)^2 - 7$

(..... , ...)

(Total for Question 17 is 1 mark)

[Edexcel, GCSE, Autumn 2020, Paper 2H, Q17]

6

The equation of a curve is $y = 4x^2 - 56x$
The curve has one turning point.

By completing the square, show that the coordinates of the turning point are $(7, -196)$
You must show all your working.

(Total for Question 21 is 3 marks)

[Edexcel, GCSE, November 2022, Paper 3H, Q21]

7

(a) (i) Write $x^2 - 8x + 3$ in the form $(x - a)^2 - b$ where a and b are integers.

.....

(2)

(ii) Hence, write down the coordinates of the turning point on the graph of $y = x^2 - 8x + 3$

(..... , ...)

(1)

(b) Solve $7x^2 + 8x - 5 = 0$
Give your solutions correct to 3 significant figures.

.....

(3)

Alex has to find the solutions of the quadratic equation $3k^2 + 10k - 8 = 0$
Here is his working and answer.

$(3k - 2)(k + 4) = 0$

$k = 2$ or $k = -4$

(c) What mistake has Alex made?

.....

.....

.....

(1)

(Total for Question 17 is 7 marks)

[Edexcel, GCSE, November 2023, Paper 3H, Q17]