

**AQA, OCR, Edexcel**

**GCSE**

# GCSE Maths

## Completing the Square Questions

Name:

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Total Marks:

## Completing the Square

1. a. Express  $x^2 + 10x - 3$  in the form  $(x + p)^2 + q$ .  
b. Hence, or otherwise, solve  $x^2 + 10x - 3 = 0$

(4 Marks)

2. Given that  $(x + 8)^2 - 62 = ax^2 + bx + c$ , find the values of  $a, b$ , and  $c$ .

(3 Marks)

3. Solve the following quadratic equations through completing the square.  
Leave your answer in surd form where necessary:

- a.  $x^2 + 4x = 4$
- b.  $x^2 + 6x = 1$
- c.  $x^2 + 10x + 3 = 0$
- d.  $2x^2 + 20x + 30 = 0$
- e.  $\frac{(x^2 + 2x)}{2} = 1$

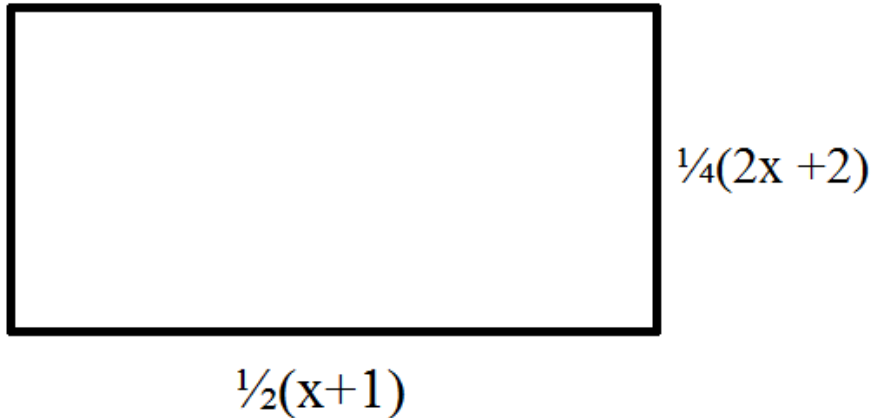
(15 Marks)

4. Express  $3 - 10x - x^2$  in the form  $n - (x - m)^2$ .  
a. Hence, solve  $3 - 10x - x^2 = 0$ .

(5 Marks)

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5. The diagram below shows a rectangle with area equal to  $\frac{4x+12}{4}$ .



- a. Show that  $x^2 - 2x - 11 = 0$   
b. Hence solve for  $x$

**(Hard)**

(5 Marks)

6. a. Write  $2x^2 + 3x - 2$  in the form  $r(x + p)^2 + q$   
b. Use your answer to part a to give the coordinates for the minimum point on the graph of  $2x^2 + 3x - 2$ .

**(Hard)**

(5 Marks)