

Name: _____

Level 2 Further Maths

Quadratic Graphs



Corbettmaths

Ensure you have: Pencil or pen

Guidance

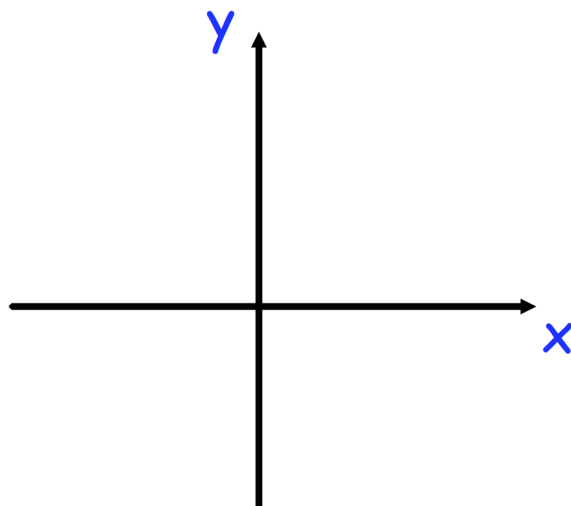
1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Revision for this topic

www.corbettmaths.com/more/further-maths/

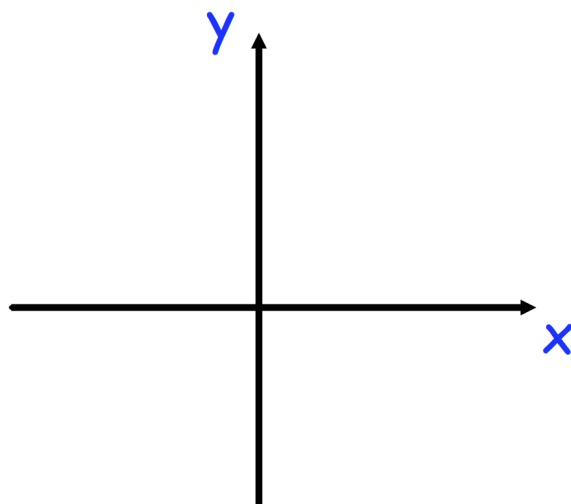


1. Sketch the graph of $y = x^2 + 6x + 8$
Clearly show the coordinates of any points of intersection with the axes.



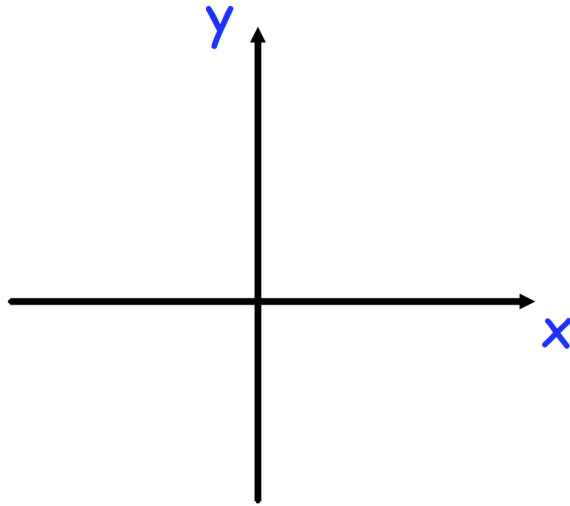
(3)

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2. Sketch the graph of $y = x^2 - x - 56$
Clearly show the coordinates of any points of intersection with the axes.



(3)

3. (a) Sketch the graph of $y = x^2 - 38x + 72$
Clearly show the coordinates of any points of intersection with the axes.

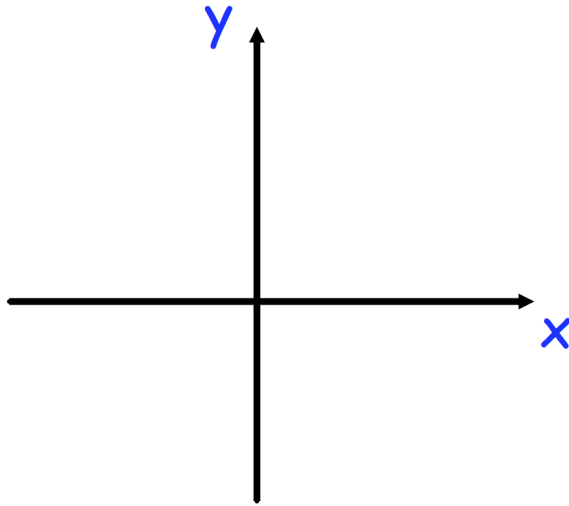


(3)

- (b) Work out the equation of the line of symmetry of the graph of $y = x^2 - 38x + 72$

.....
(1)

4. (a) Sketch the graph of $y = x^2 - 4x - 5$
Clearly show the coordinates of any points of intersection with the axes.



(3)

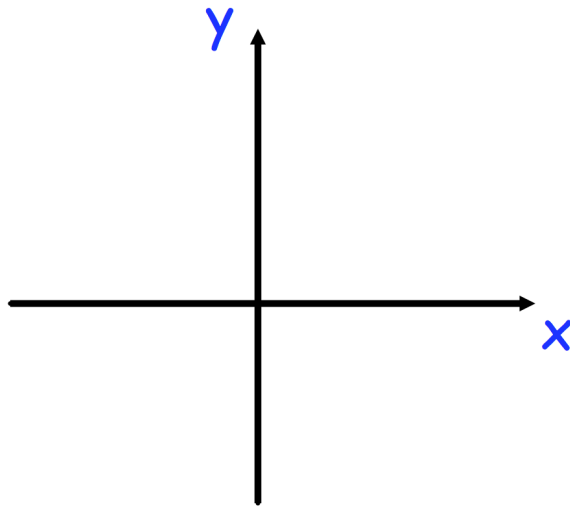
- (b) Work out the equation of the line of symmetry of the graph of $y = x^2 - 4x - 5$

.....
(1)

- (c) Use your answer to (b) to find the coordinates of the minimum point of $y = x^2 - 4x - 5$

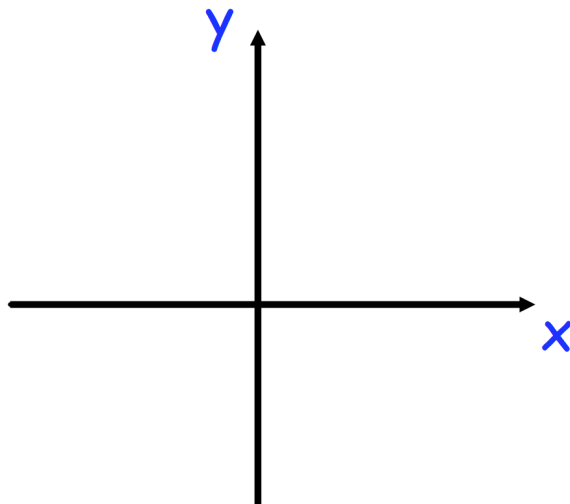
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(2)

5. Sketch the graph of $y = -x^2 + 6x + 55$
Clearly show the coordinates of any points of intersection with the axes.



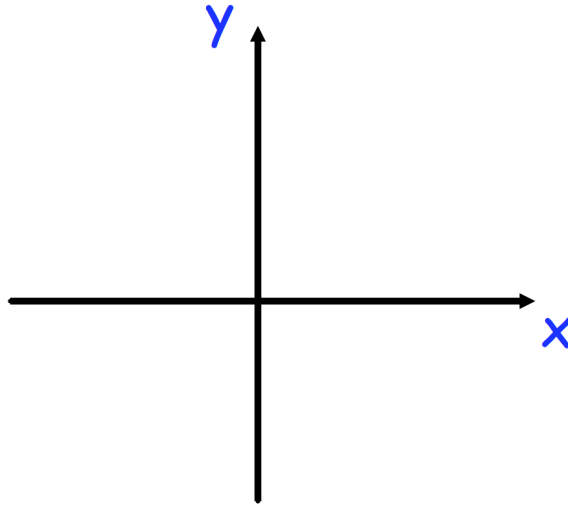
(3)

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6. Sketch the graph of $y = 5x^2 - 31x + 30$
Clearly show the coordinates of any points of intersection with the axes.



(4)

7. Sketch the graph of $y = 2x^2 + 7x - 4$
Clearly show the coordinates of any points of intersection with the axes.

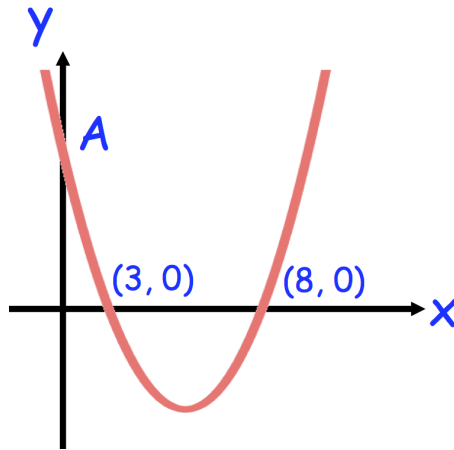


(3)

- (b) Work out the equation of the line of symmetry of the graph of
 $y = 2x^2 + 7x - 4$

.....
(1)

8. Shown is the graph of $y = x^2 + bx + c$



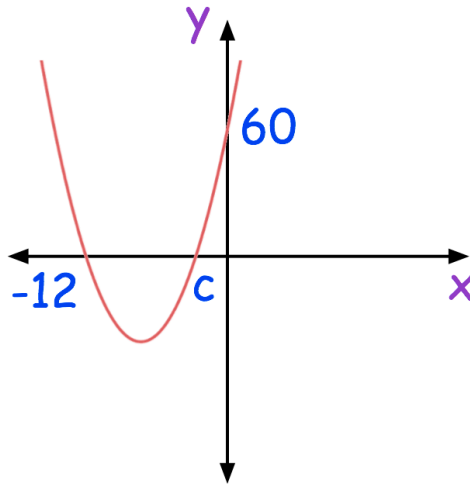
(a) Find the values of b and c

.....
(2)

(b) Find the coordinates of point A

.....
(2)

9. Shown is the graph of $y = x^2 + ax + b$



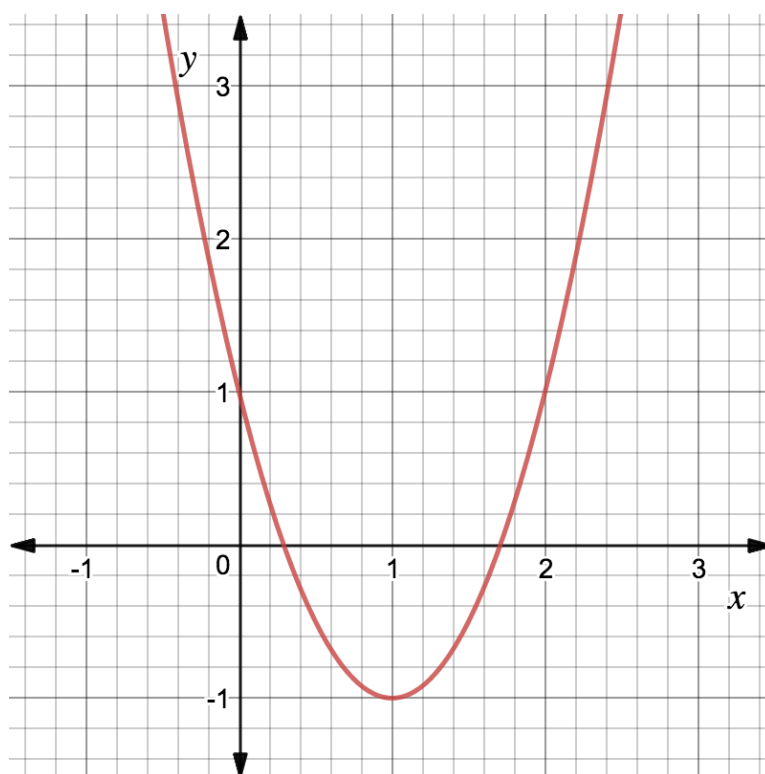
(a) Find the values of a and b

.....
(2)

(b) Find the coordinates of point c

.....
(2)

11. Shown below is the graph of $y = 2x^2 - 4x + 1$

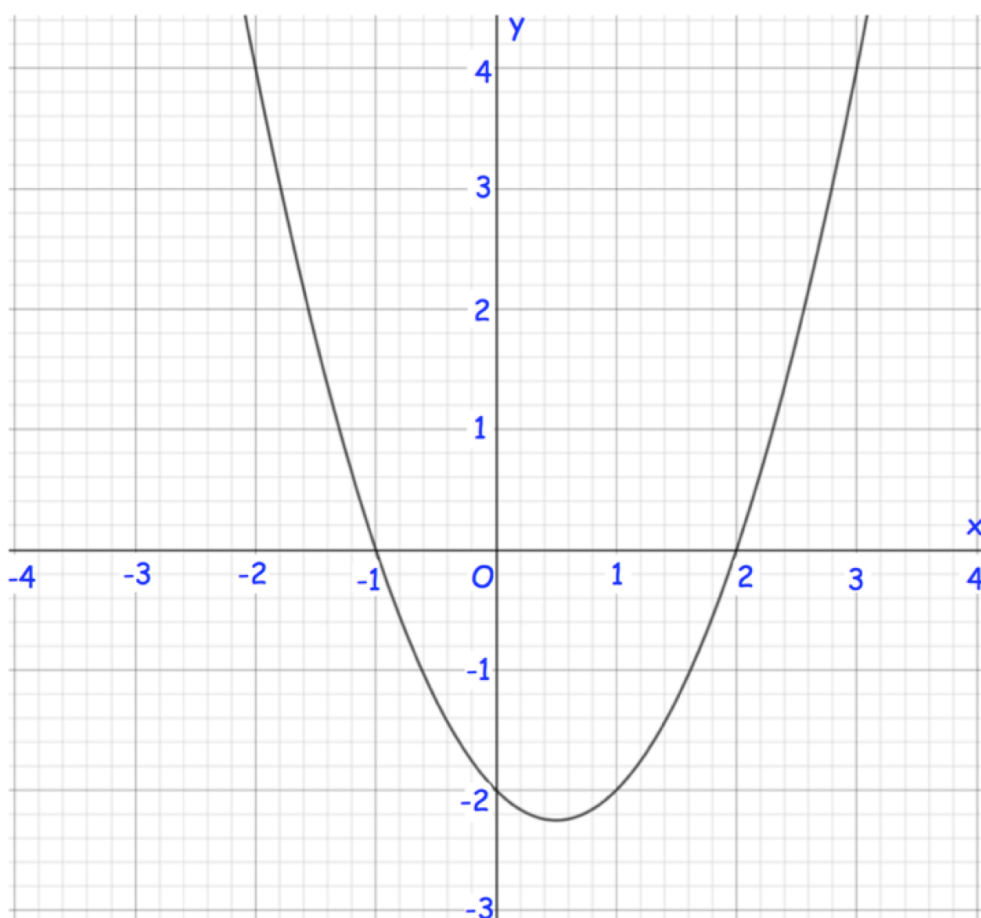


The graph of $2x^2 - 4x + 1 = k$ has exactly one solution.

Use the graph to find the value of k

.....
(2)

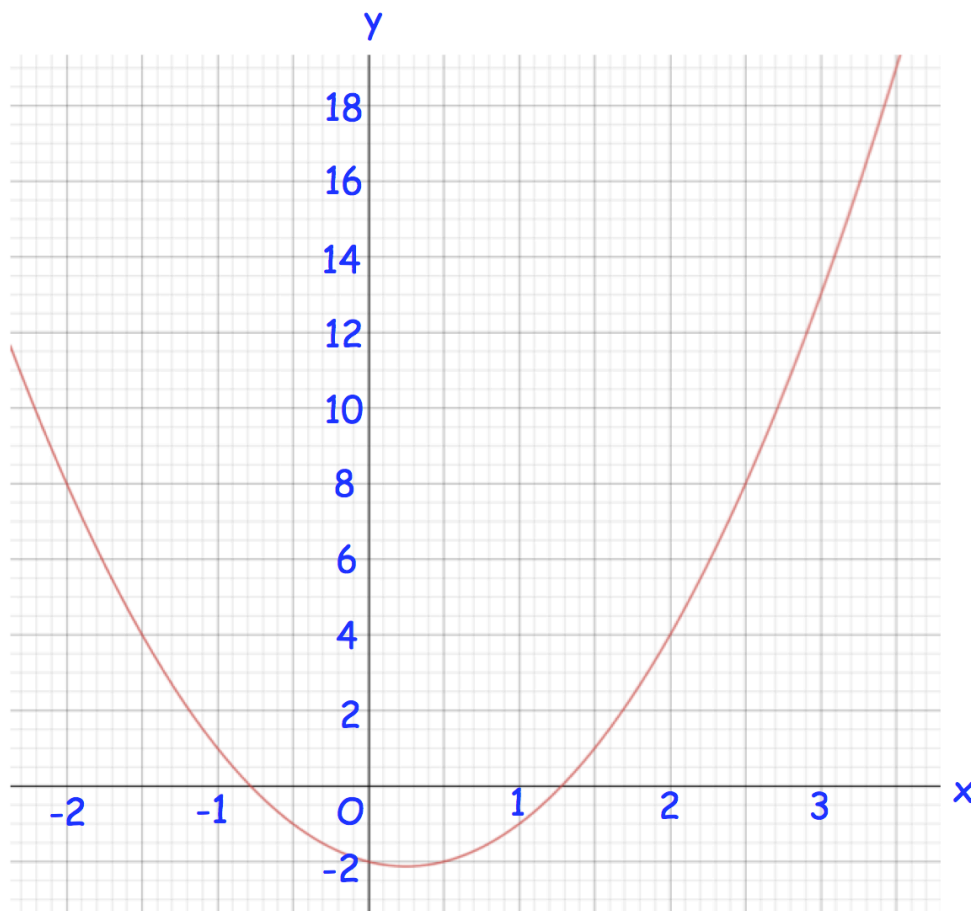
12. Shown below is $y = x^2 - x - 2$



By drawing an appropriate straight line, use your graph to find estimates for the solutions of $x^2 - 2x - 1 = 0$

.....
(4)

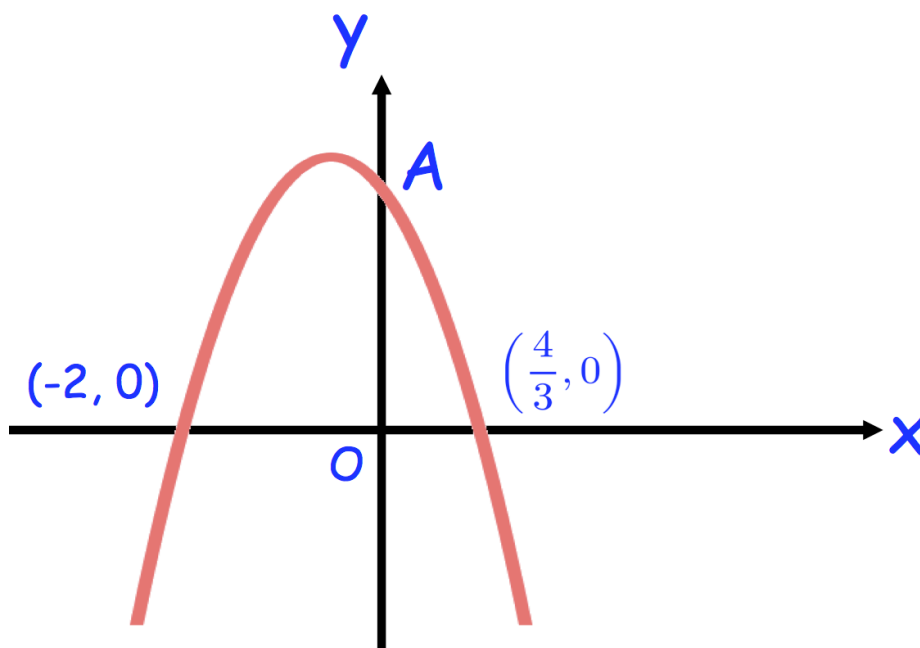
13. Shown below is $y = 2x^2 - x - 2$



By drawing an appropriate straight line, use your graph to find estimates for the solutions of $2x^2 - 4x - 3 = 0$

.....
(4)

14. Here is the graph of $y = a + bx - 3x^2$



Work out the coordinates of the point A.

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(4)