

Warm-up:

Oct. 20, 2017

For the function: $y = x^2 - 2x - 3$

Answer the following:

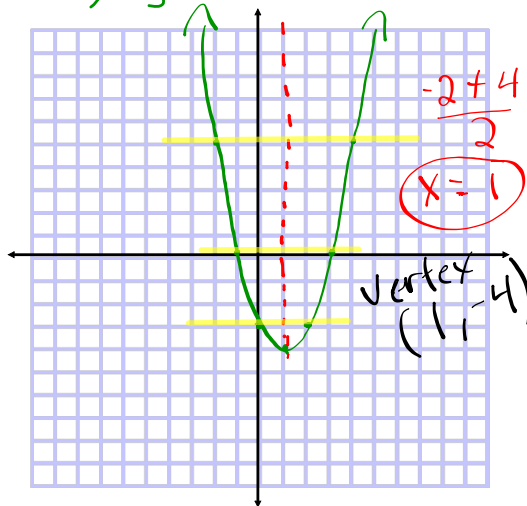
- Determine two points that are the same distance from the axis of symmetry. State the AOS
- Determine the coordinates of the vertex
- Graph the function

X	Y
-2	0
-1	0
0	-3
1	-4
2	-3
3	0

$$y = (-2)^2 - 2(-2) - 3$$

$$y = 4 - (-4) - 3$$

$$y = 5 - (-4) - 3$$



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Partial Factoring:

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For the function: $y = x^2 - 2x - 3$

Answer the following:

- Use partial factoring to determine two points that are the same distance from the axis of symmetry. State the AOS
- Determine the coordinates of the vertex

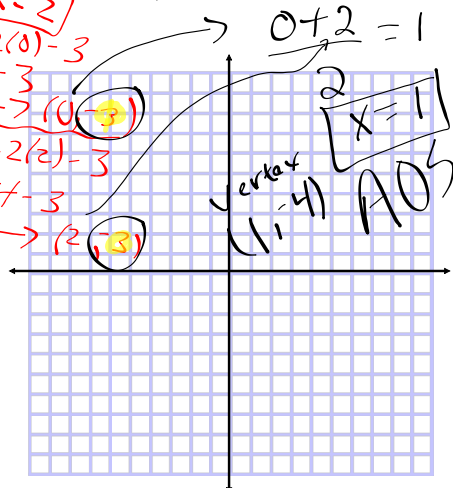
$$y = (x^2 - 2x) - 3$$

$$0 = x(x - 2) - 3$$

$$x = 0 \quad x - 2 = 0 \quad x = 2$$

$$f(0) = (0)^2 - 2(0) - 3 = -3 \rightarrow (0, -3)$$

$$f(2) = (2)^2 - 2(2) - 3 = -3 \rightarrow (2, -3)$$



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Example 2:

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For the function: $y = 2x^2 - 4x + 9$

Answer the following:

- Use partial factoring to determine two points that are the same distance from the axis of symmetry. State the AOS
- Determine the coordinates of the vertex
- Graph the function

$$y = 2x^2 - 4x + 9 \quad +9$$

$$y = 2x(x-2) + 9$$

$$\frac{2x}{2} = 0 \quad x-2 = 0$$

$$\boxed{x=0} \quad \boxed{x=2}$$

$$(0, 9) \quad (2, 9)$$

$$f(2) = 2(2)^2 - 4(2) + 9$$

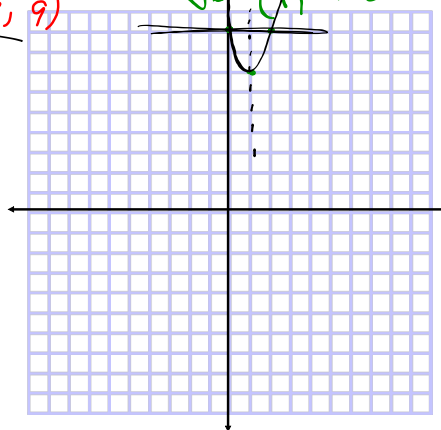
$$f(2) = 8 - 8 + 9$$

$$f(2) = 9$$

AOS: $x = \frac{0+2}{2}$

Vertex: $(1, 7)$ $x = 1$

$y \in \mathbb{R}$



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Attachments

7s3e1 finalt.mp4

7s3e2 finalt.mp4

7s3e3 finalt.mp4

fm7s3-p1.tns

fm7s3-p2.tns

fm7s3-p8.tns

FM11-7s3-2.gsp

FM11-7s3.gsp