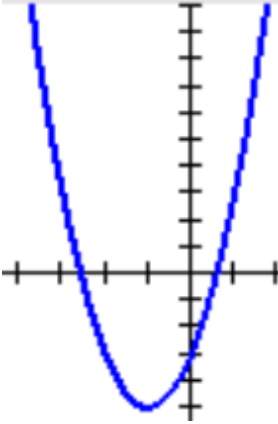
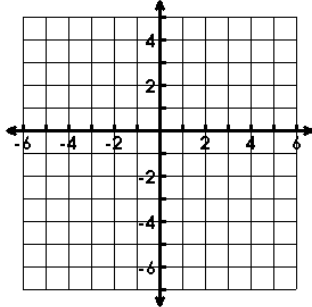


Graph the following equation. Then, write the characteristics for the graph.

<p>1. $2(x + 1)^2 - 5$</p> <ul style="list-style-type: none"> • Vertex: _____ • Axis of Sym.: _____ • Domain: _____ • Range: _____ • Increase: _____ • Decrease: _____ • Y-int: _____ • End Behavior: <ul style="list-style-type: none"> As $x \rightarrow -\infty$, $f(x) \rightarrow$ _____ As $x \rightarrow +\infty$, $f(x) \rightarrow$ _____ 	<p>2. $y = -x^2 + 4x$</p> <ul style="list-style-type: none"> • Vertex: _____ • Axis of Sym.: _____ • Domain: _____ • Range: _____ • Increase: _____ • Decrease: _____ • Y-int: _____ • End Behavior: <ul style="list-style-type: none"> As $x \rightarrow -\infty$, $f(x) \rightarrow$ _____ As $x \rightarrow +\infty$, $f(x) \rightarrow$ _____ 
<p>Describe the transformations to the parent function in the given equations.</p>	
<p>3. $y = -(x + 2)^2 - 5$</p>	<p>4. $y = 3(x - 4)^2 + 2$</p>
<p>Write the quadratic equation of the graph that has been....</p>	
<p>5. shifted down 1 and shrunk by a factor of $\frac{1}{2}$</p>	<p>6. reflected over the x-axis and has shifted right 2</p>
<p>Change the equations to standard form.</p>	
<p>7. $y = 2(x - 1)^2 + 4$</p>	<p>8. $y = (x + 4)^2 - 6$</p>

Change the equations to vertex form.

9. $y = x^2 + 6x - 2$

10. $y = x^2 + 8x + 1$

11. What is the vertex and axis of symmetry of the quadratic $y = 2(x - 3)^2 + 4$?

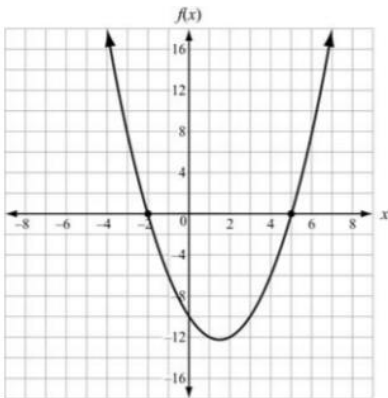
- a) (2, -3); $x = -3$
- b) (3, 4); $x = 4$
- c) (3, 4); $x = 3$
- d) (4, 3); $x = 4$

12. Identify the vertex of $f(x) = x^2 + 10x - 9$?

- a) (5, 66)
- b) (5, -9)
- c) (-5, -9)
- d) (-5, -34)

13. Which function is shown in the graph?

- a) $f(x) = x^2 - 3x - 10$
- b) $f(x) = x^2 + 3x - 10$
- c) $f(x) = x^2 + x - 12$
- d) $f(x) = x^2 - 5x - 8$



14. Tell whether the graph of the quadratic function $y = -2x^2 - 5x + 15$ opens up or down, and why.

- a) Because $a < 0$, the parabola opens down.
- b) Because $a < 0$, the parabola opens up.
- c) Because $a > 0$, the parabola opens down.
- d) Because $a > 0$, the parabola opens up.