

Introduction to Transformations and Absolute Value Date \_\_\_\_\_ Period \_\_\_\_\_

1) What is the shape of the parent function  $y = x^2$ ?

**Without graphing, describe the transformations of each parabola.**

2)  $y = 2(x + 1)^2 - 1$

3)  $y = -2(x - 4)^2 - 1$

4)  $y = -(x - 3)^2 - 4$

5)  $y = -4(x - 1)^2 + 1$

**Write the equation of the following functions**

6) A quadratic function that is transformed 3 units to the right and 5 units down.

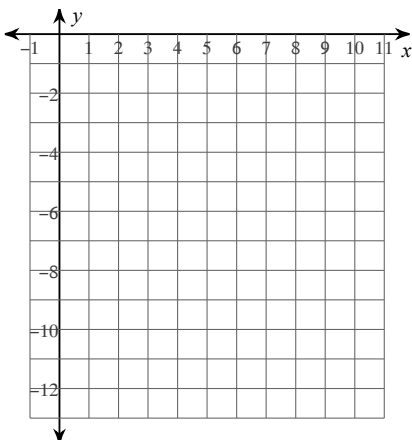
7) An absolute value function that is transformed 3 units to the left and 1 unit up.

8) A quadratic function that is stretched vertically by 3 units and transformed 7 units to the left and 2 units up.

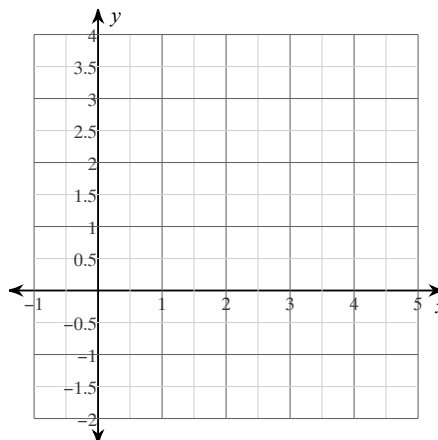
9) An absolute value function that is flipped over and transformed 4 units to the left and 1 unit down.

**Sketch the graph of each function. STATE THE DOMAIN AND RANGE.**

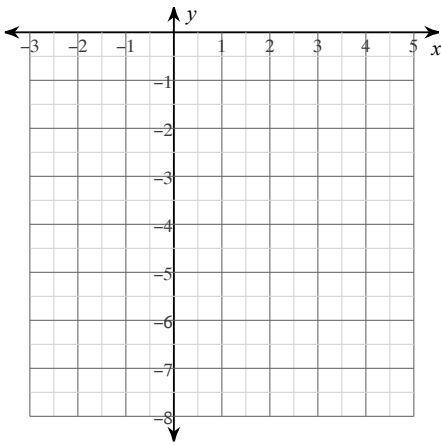
10)  $y = -2(x - 3)^2 - 4$



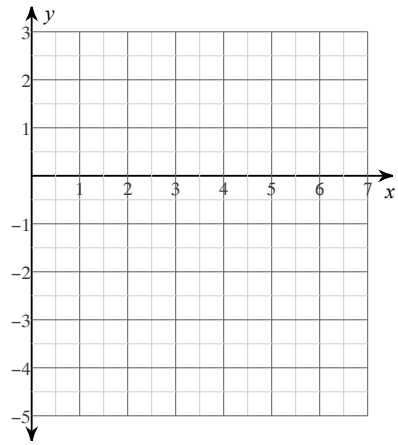
11)  $y = -(x - 3)^2 + 3$



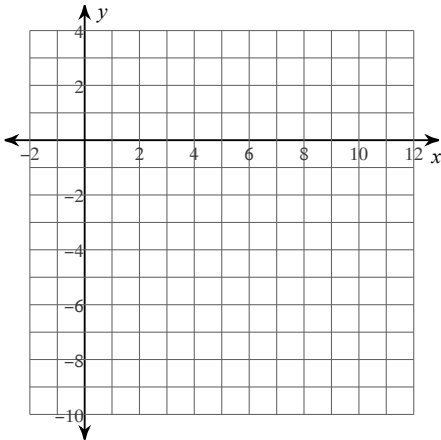
12)  $y = -(x - 2)^2 - 3$



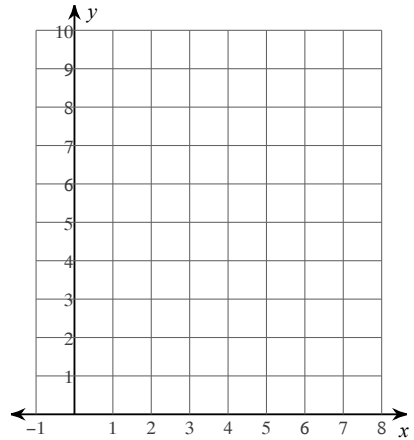
13)  $y = (x - 4)^2 - 3$



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



15)  $y = 2(x - 4)^2 + 1$



**Without graphing, describe the transformations of the following functions.**

16)  $y = |x + 1| - 4$

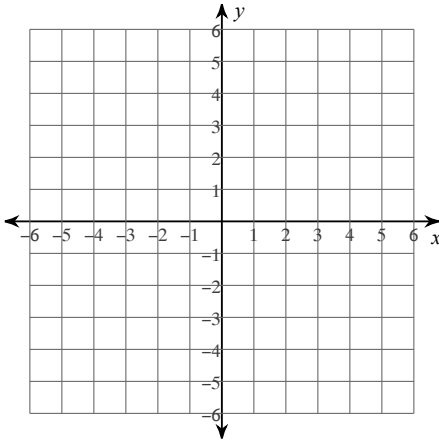
17)  $y = -|x| + 4$

18)  $y = 3|x| + 4$

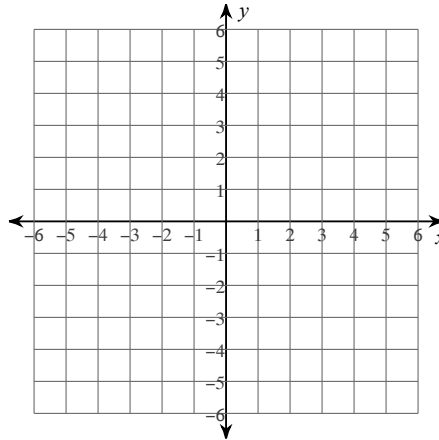
19)  $y = -2|x - 1|$

**Graph each equation. State the vertex. STATE THE DOMAIN AND RANGE.**

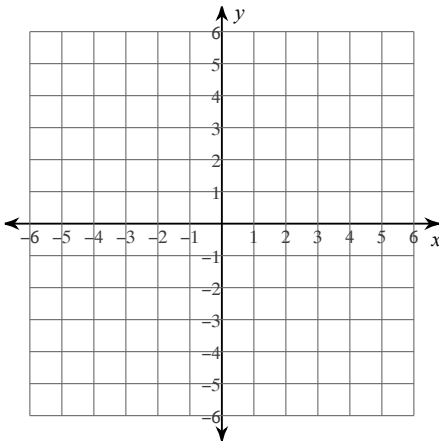
20)  $y = |x + 4|$



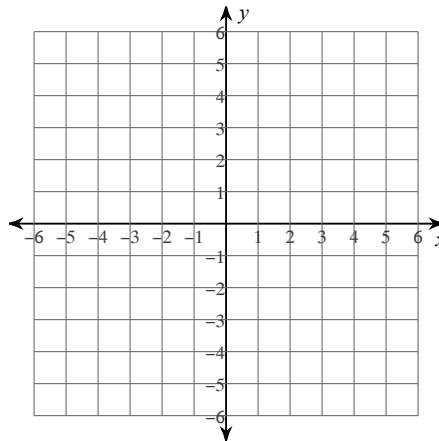
21)  $y = -|x + 4| + 2$



22)  $y = -|x - 2| + 4$

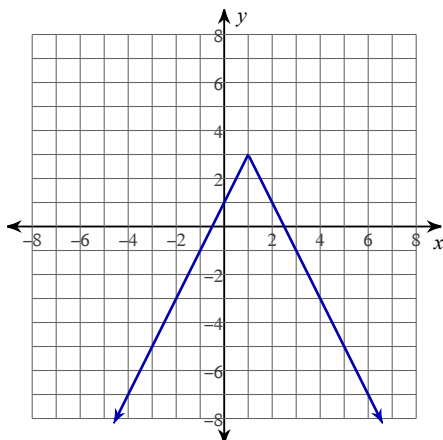


23)  $y = 2|x - 2|$

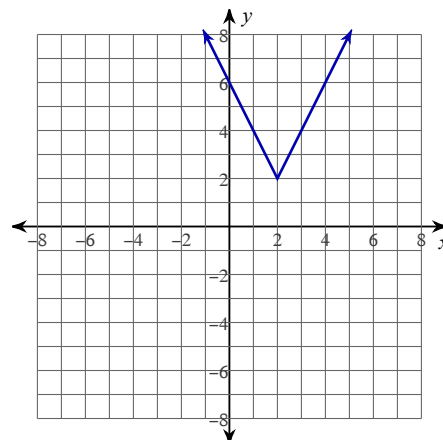


**Find the equation of the function shown in the graph.**

24)



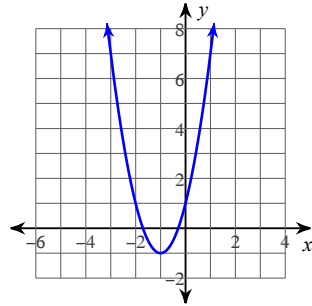
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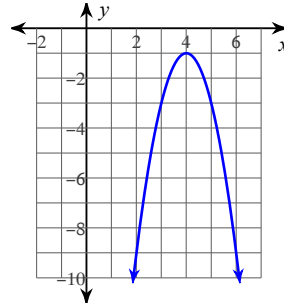
# Answers to Introduction to Transformations and Absolute Value (ID: 1)

1)

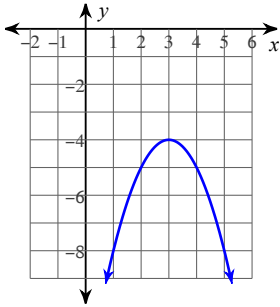
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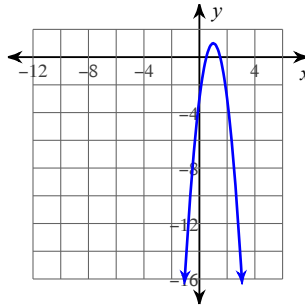
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4)



5)

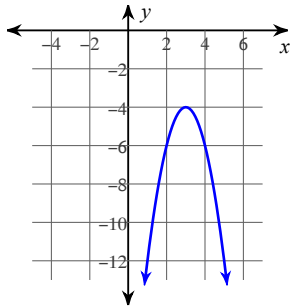


6)

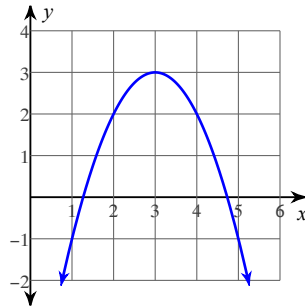
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8)

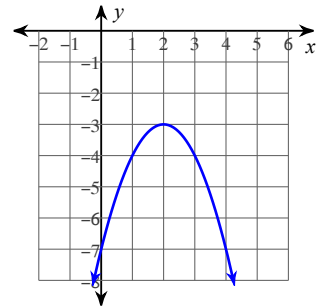
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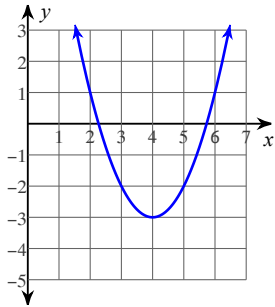
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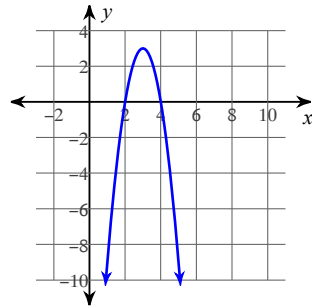
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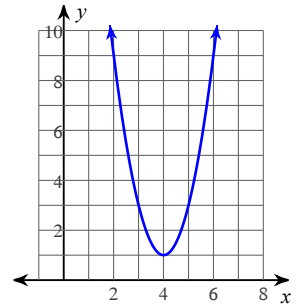
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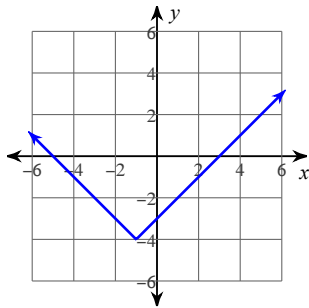
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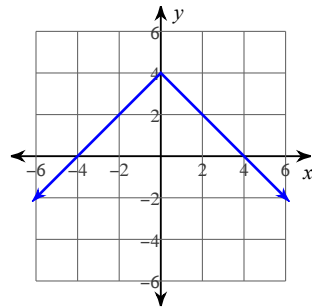
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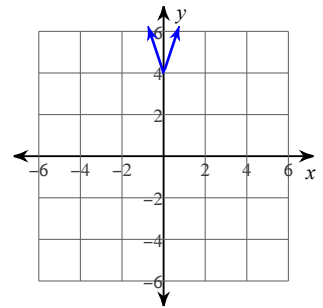
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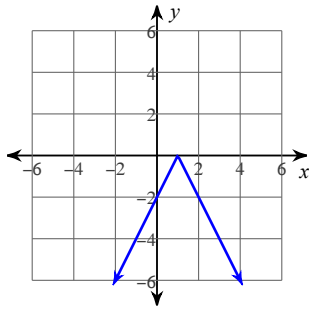
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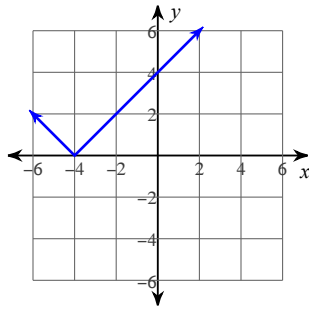
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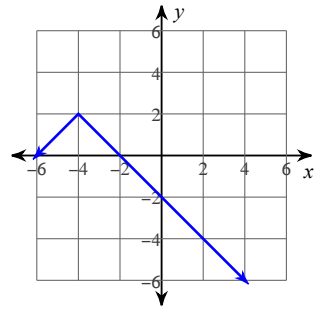
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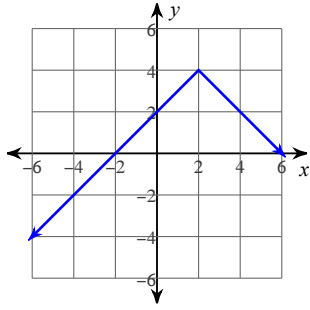
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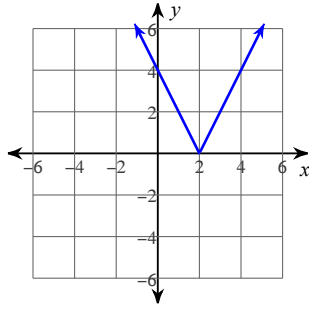
21)



22)



23)



24)

25)