Key

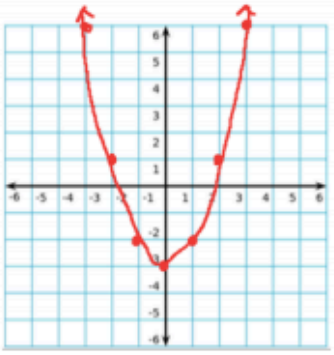
Transformations of Quadratic Functions

Describe the transformation of $f(x) = x^2$ represented by $g(x)$. Then graph $g(x)$.

1. $g(x) = x^2 - 3$

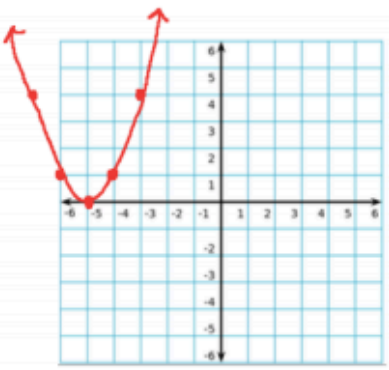
$(x-0)^2 - 3$

trans. 3 units down



2. $g(x) = (x + 5)^2 + 0$

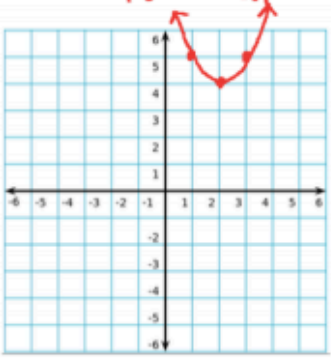
trans. 5 units left



3. $g(x) = (x - 2)^2 + 4$

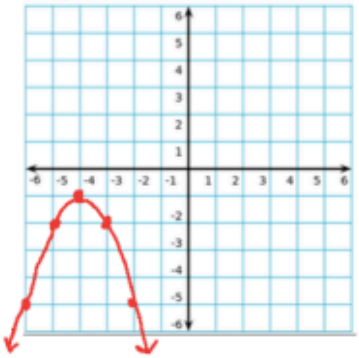
trans. 2 units right

4 units up



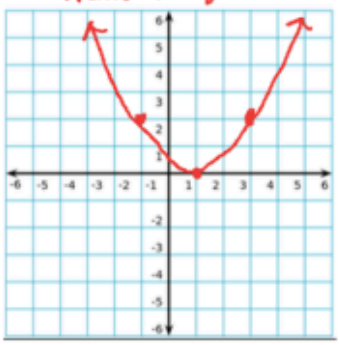
4. $g(x) = -(x + 4)^2 - 1$

- ref x-axis
- trans. 4 left
- trans 1 down



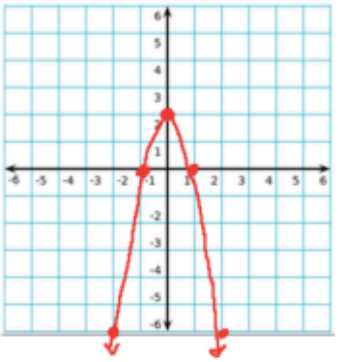
5. $g(x) = \frac{1}{2}(x - 1)^2$

- vert. comp. scale fac $\frac{1}{2}$
- trans 1 right



6. $g(x) = -2x^2 + 2 = -2(x-0)^2 + 2$

- ref x-axis
- vert stretch fac 2
- trans 2 up



In Exercises 12 – 15, match the function with the correct transformation of the graph f(x).

12. $f(x - 1)$ A

right 1

13. $f(x) + 1$ D

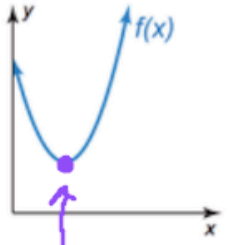
up 1

14. $f(x - 1) + 1$ C

right 1 up 1

15. $f(x + 1) - 1$ B

left 1 down 1



Focus on the vertex!