

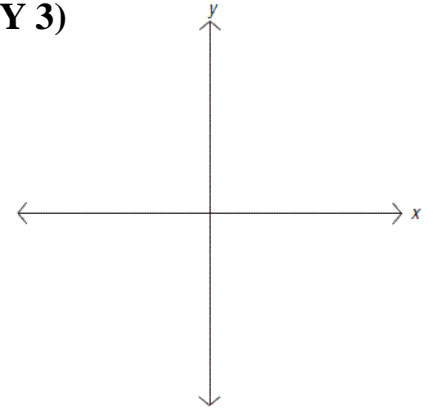
Do Now: Describe how the graph of $s(x) = -(x-6)^2 + 8$ is related to the graph of $f(x) = x^2$.

AIM: TRANSFORMATIONS (DAY 3)

1. Given $f(x) = \sqrt{x}$

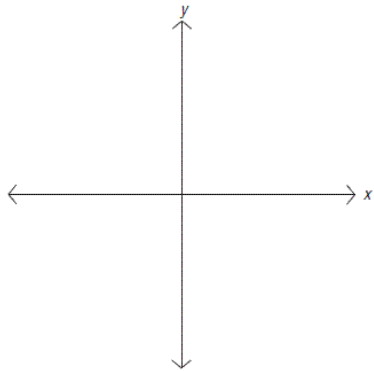
(a) Sketch the function.

(b) Identify the type of function:



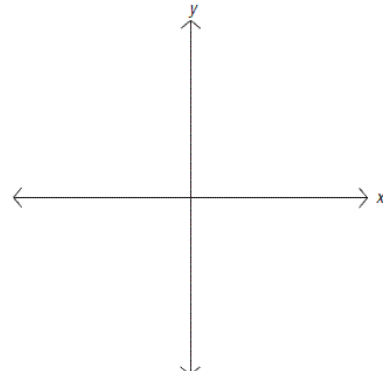
2. Compare the graph of each function with the graph of $f(x) = \sqrt{x}$.

a) $g(x) = -\sqrt{x}$



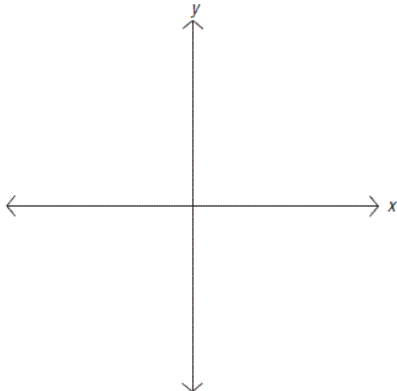
Describe the transformation:

b) $h(x) = \sqrt{-x}$



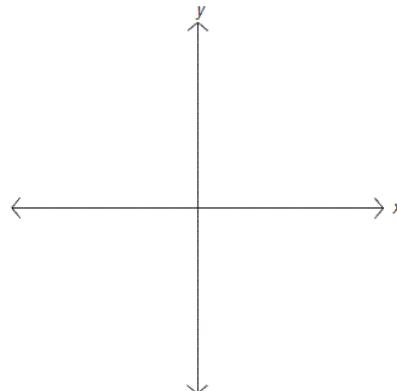
Describe the transformation:

c) $k(x) = -\sqrt{x+2}$



Describe the transformation:

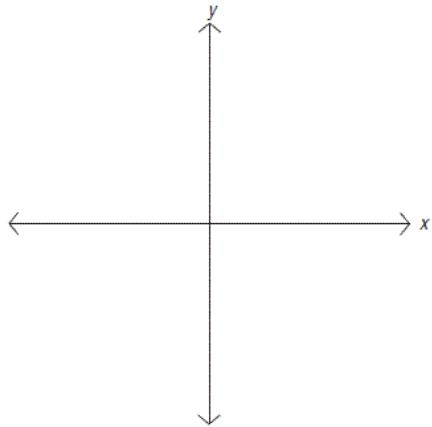
d) $p(x) = \sqrt{-x} + 4$



Describe the transformation

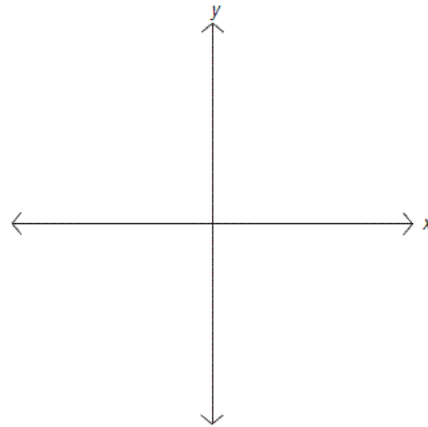
3. Compare the graph of each function with the graph of $f(x) = |x|$.

a) $g(x) = -|x|$



Describe the transformation:

b) $h(x) = |-x|$



Describe the transformation:

4. Describe how the graph of each function is related to the graph of the parent function $f(x) = x^2$.

a) $h(x) = -x^2 + 10$

b) $g(x) = \frac{1}{2}(x-5)^2 + 6$

c) $c(x) = \frac{3}{2}(x-11)^2 + 3$

d) $a(x) = \frac{3}{4}(x+7.5)^2 - 18$

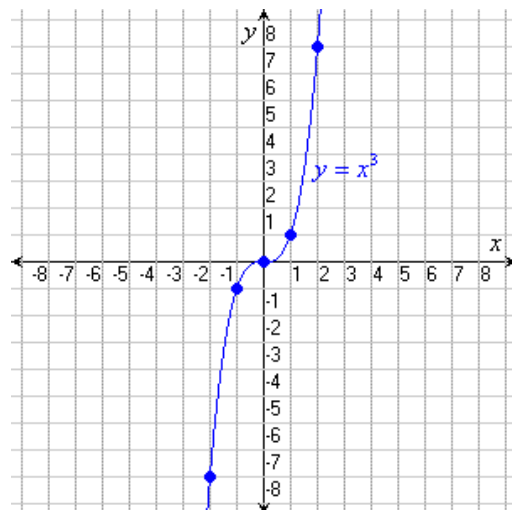
e) $g(x) = f(x) - 7$

f) $t(x) = f(x-12) - 1$

5. Given the parent function $f(x) = x^3$.

a) Sketch the function $g(x) = -x^3$

b) Describe the transformation.



6. Describe how the graph of each function is related to the graph of the parent function $f(x) = |x|$.

a. $g(x) = -|x + 9| - 2$

b. $k(x) = \frac{5}{2}|x - 16| + 13$

c. $j(x) = -.75|x + 6| - 3.5$

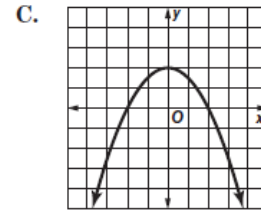
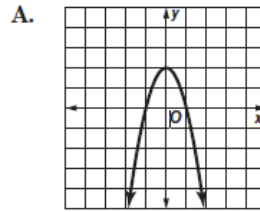
d. $g(x) = -2.75|x - 15| + 4$

e. $g(x) = f(x) + 20$

f. $d(x) = -\frac{2}{3}f(x) - 100$

Match each function to its corresponding graph by putting the appropriate letter next to each equation.

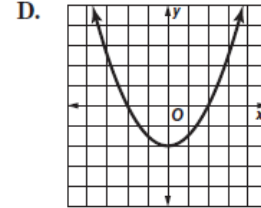
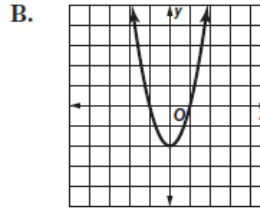
1. $f(x) = 2x^2 - 2$ _____



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

3. $h(x) = -\frac{1}{2}x^2 + 2$ _____

4. $j(x) = -2x^2 + 2$ _____



5. Describe how the graph of each function is related to the graph of the parent function $f(x) = x^2$.

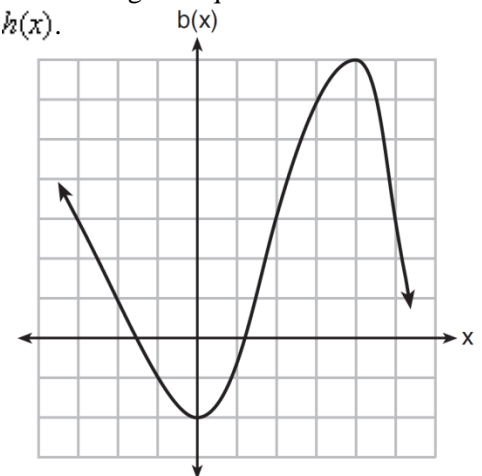
a) $h(x) = -x^2 - 7$

b) $g(x) = 2(x - 3)^2 + 8$

c) $m(x) = -(x - 23)^2$

d) $g(x) = \frac{2}{5}(x + 16)^2 - 11$

6. Richard is asked to transform the graph of $b(x)$ below. The graph of $b(x)$ is transformed using the equation $h(x) = b(x - 2) - 3$. Describe how the graph of $b(x)$ changed to form the graph of $h(x)$.



7. Analyze the piecewise function whose graph is shown and complete the following:

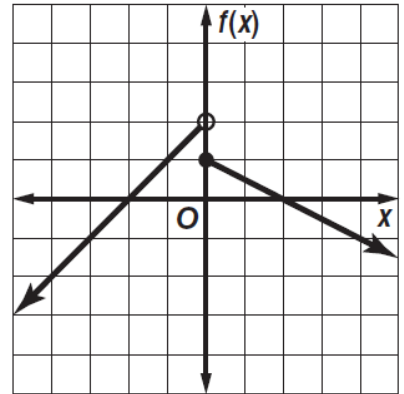
(a) What is the domain in set builder notation? _____

(b) What is the range in set builder notation? _____

(c) What is the domain in interval notation? _____

(d) What is the range in interval notation? _____

(e) Write the equation of the piecewise function: $f(x) = \{$



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