Name:_____ Date:_____

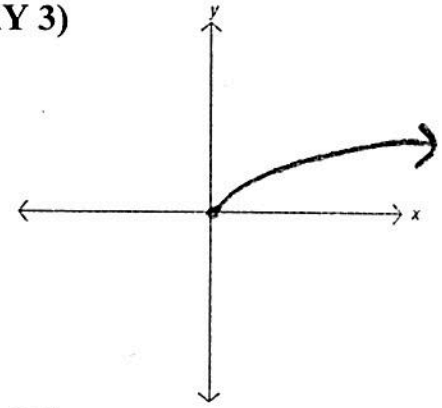
UNIT 6B **LESSON 14**

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

reflected over x-axis, right 6 & up 8

AIM: TRANSFORMATIONS (DAY 3)

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

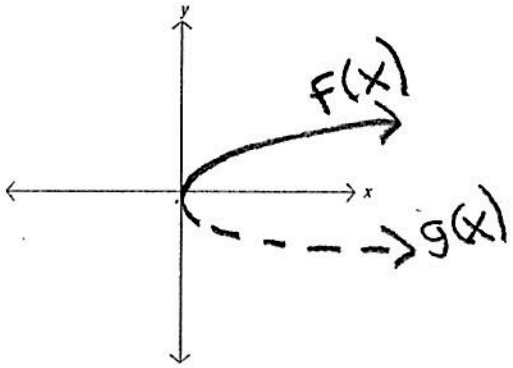


(a) Sketch the function.

(b) Identify the type of function: Square root function

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

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

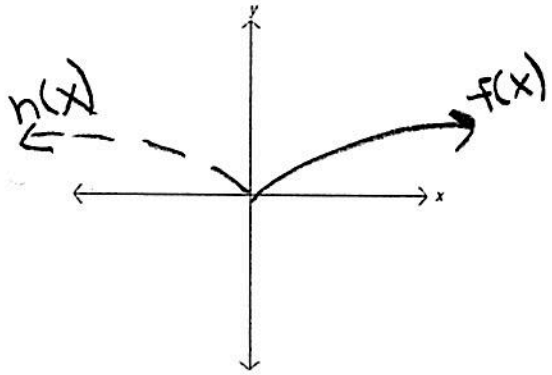


Describe the transformation: reflection over x-axis

$-f(x) = -\sqrt{x}$

outside outside

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

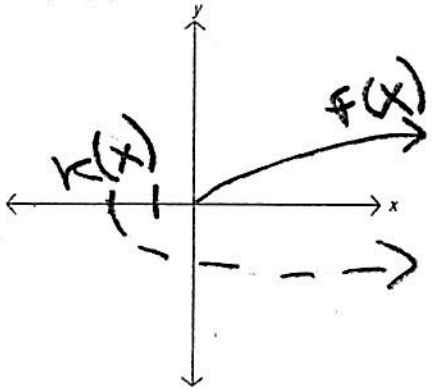


Describe the transformation: reflection over y-axis

$f(-x) = \sqrt{-x}$

inside inside

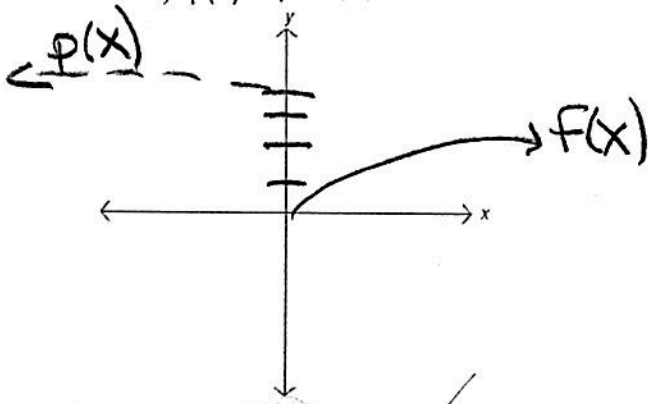
c) $k(x)=-\sqrt{x+2}$



Describe the transformation:

reflection over x-axis
left 2 units

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

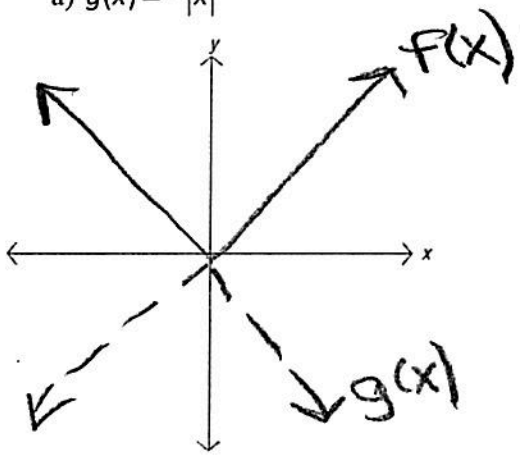


Describe the transformation

reflection over y-axis
up 4 units

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

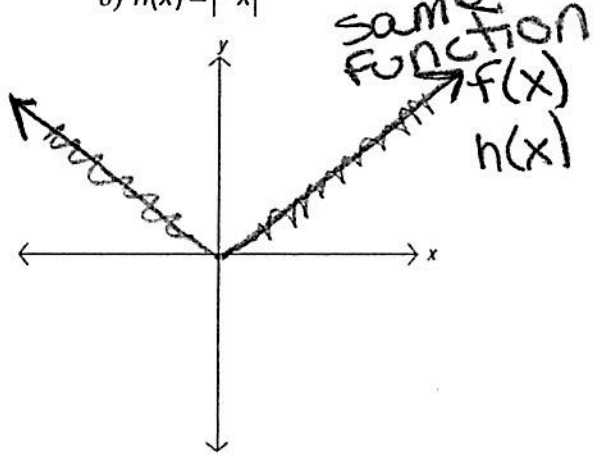
a) $g(x)=-|x|$



Describe the transformation:

reflection over x-axis

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



Describe the transformation:

reflection over Y-axis

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

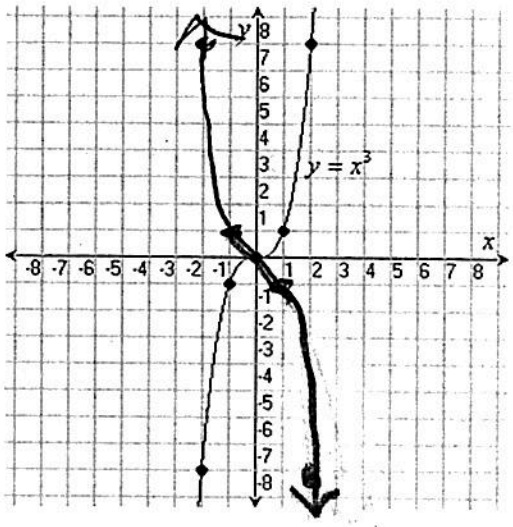
a) $h(x)=-x^2+10$ reflect over x-axis up 10 units	b) $g(x)=\frac{1}{2}(x-5)^2+6$ wider-horizontally stretched right 5 units up 6 units
c) $c(x)=\frac{3}{2}(x-11)^2+3$ narrower-vertically stretched right 11 units up 3 units	d) $a(x)=\frac{3}{4}(x+7.5)^2-18$ wider-horizontally stretched left 7.5 units down 18 units
e) $g(x)=f(x)-7$ down 7 units	f) $t(x)=f(x-12)-1$ right 12 units down 1 unit

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

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

b) Describe the transformation.

reflection over x-axis & y-axis



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

a. $g(x)=-\|x+9\|-2$ reflection over x-axis left 9 units down 2 units	b. $k(x)=\frac{5}{2}\|x-16\|+13$ narrower - vertically stretched right 16 units up 13 units
c. $j(x)=-.75\|x+6\|-3.5$ reflection over x-axis wider - stretch horizontally left 6 units down 3.5 units	d. $g(x)=-2.75\|x-15\|+4$ reflection over x-axis narrower - stretched vertically right 15 units up 4 units
e. $g(x)=f(x)+20$ up 20 units	f. $d(x)=-\frac{2}{3}f(x)-100$ reflection over x-axis wider - stretched vertically down 100 units