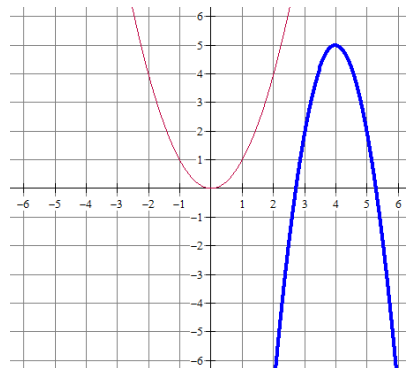
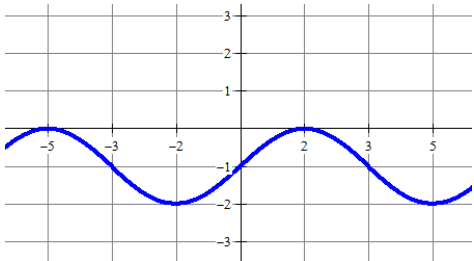
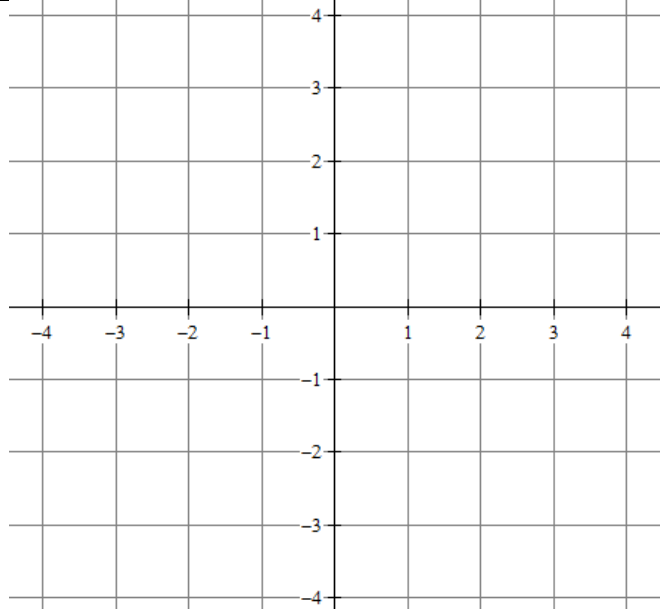


**REVIEW**

Identify the transformations.	Write the equation given the parent $y = x^3$ .	Write the equation given the parent function $y = x^2$ .																				
<p>1. <math>y = 2e^{(3-x)} - 4</math></p> <p>Translation:</p> <p>Scale:</p> <p>Reflection:</p>	<p>2. Vertical reflection about the <math>x</math>-axis, horizontal stretch of 4, vertical shift up 2.</p>	<p>3.</p> 																				
Determine if the function is even, odd, or neither. ALGEBRAICALLY	Determine if the function is even, odd, or neither. GRAPHICALLY	For #6, use the following tables.																				
<p>4. <math>f(x) = \frac{x^3+x}{x^3-x}</math></p>	<p>5.</p> 	<p>6.</p> <table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr><th><math>x</math></th><th><math>f(x)</math></th></tr> </thead> <tbody> <tr><td>-5</td><td>5</td></tr> <tr><td>-2</td><td>9</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>4</td><td>6</td></tr> </tbody> </table> <table border="1" style="display: inline-table;"> <thead> <tr><th><math>x</math></th><th><math>g(x)</math></th></tr> </thead> <tbody> <tr><td>-5</td><td>4</td></tr> <tr><td>-2</td><td>10</td></tr> <tr><td>0</td><td>-2</td></tr> <tr><td>4</td><td>8</td></tr> </tbody> </table> <p>a. <math>(g + f)(4) =</math></p> <p>b. <math>(f \circ g)(0) =</math></p>	$x$	$f(x)$	-5	5	-2	9	0	0	4	6	$x$	$g(x)$	-5	4	-2	10	0	-2	4	8
$x$	$f(x)$																					
-5	5																					
-2	9																					
0	0																					
4	6																					
$x$	$g(x)$																					
-5	4																					
-2	10																					
0	-2																					
4	8																					
<p><b>For 7-12, use the following functions. State the domain when appropriate.</b></p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"><math>f(x) = \frac{x^2 - 1}{\sqrt{2x + 9}}</math></div> <div style="text-align: center;"><math>g(x) = 3x^2 - 4x</math></div> <div style="text-align: center;"><math>h(x) = 5 - 3x</math></div> </div>																						
<p>7. <math>h - g =</math></p> <p>DOMAIN:</p>	<p>8. <math>f(g(-2)) =</math></p>	<p>9. <math>\left(\frac{g}{h}\right)(x) =</math></p> <p>DOMAIN:</p>																				
<p>10. <math>(g + h)(4) =</math></p>	<p>11. <math>(fh)(8) =</math></p>	<p>12. <math>g \circ h =</math></p> <p>DOMAIN:</p>																				

Graph  $f$  and verify that  $f$  is one-to-one function. Find  $f^{-1}$  and add the graph of  $f^{-1}$  and the line  $y = x$  to the graph  $f$ . State the domain and range of  $f$  and the domain and range of  $f^{-1}$ .

17.  $f(x) = \sqrt{3-x} + 2$



$f$

**D:**

**R:**

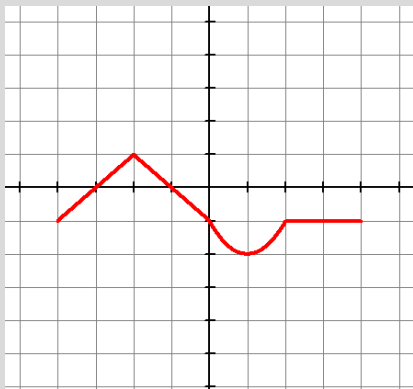
$f^{-1}$

**D:**

**R:**

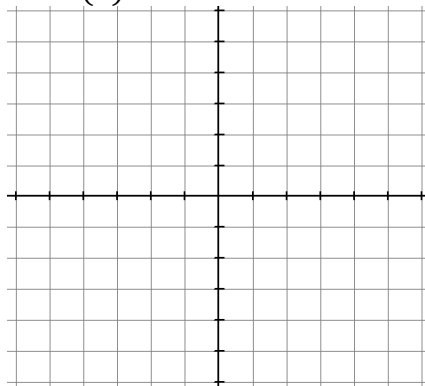
### APPLICATION

Given the  $h(x)$  is shown below:

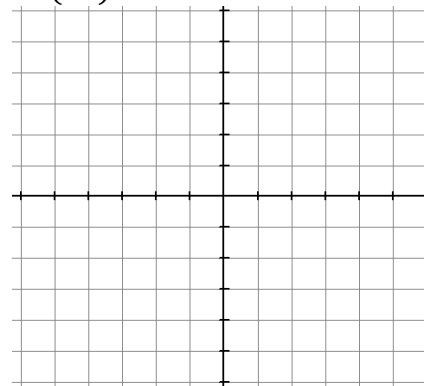


Sketch a graph of the following:

18.  $-2h(x)$



19.  $h(2x) + 1$



20. Describe the transformations from the parent function  $f(x)$  to  $-3f(x + 2) - 1$ .

21. Given  $g(x) = \frac{A}{x} + \frac{8}{x^2}$  If  $g(-1) = 0$ , then find  $A$ .

22. Graph  $f(x) = \begin{cases} -x, & -5 \leq x \leq -1 \\ -(x+1)^2 + 1, & -1 \leq x \leq 1 \end{cases}$

a. Sketch  $f^{-1}(x)$ .

b. Write the equations for  $f^{-1}(x) = \left\{ \begin{array}{l} \end{array} \right.$

c. Find the Domain and Range of  $f^{-1}(x)$ .

