

#8

Name:

"EC" = Extra credit

- a. When a coordinate point is reflected about the x-axis, what value in the coordinate pair changes? How does it change?
- b. How do you know if a graph is being reflected about the x-axis by looking at its equation?
- c. When a coordinate point is reflected about the y-axis, what value in the coordinate pair changes? How does it change?
- d. How do you know if a graph is being reflected about the y-axis by looking at its equation?

2. Use the graph of the elementary, or arbitrary, function $y = f(x)$ below.

(i) State the transformation(s).

(ii) Sketch an accurate graph of the transformed function. You may want to use difference colors to represent the different transformations.

<p>$y = f(x)$</p>	<p>a. $y = -f(x)$</p>	<p>b. $y = f(-x)$</p>
<p>c. $y = -f(x) + 3$</p>	<p>d. $y = -f(-x)$</p>	<p>EC e. *** $y = f(-x + 2)$</p>

3. If the point $(-3, 15)$ lies on the graph of an elementary function $y = h(x)$, find a point on the function below.

a. $y = h(-x) - 9$

b. $y = -h(x + 2)$

c. $y = -h(-x) + 1$

4. Using the elementary function $y = 3.5\sqrt{x+8} + 2$, create a new equation that will transform the given equation in the manner indicated.

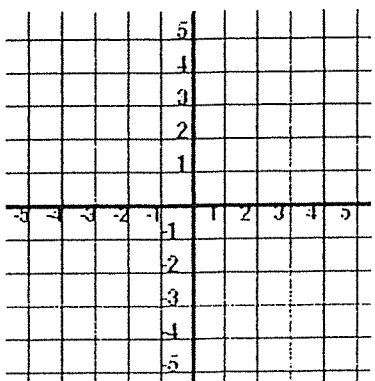
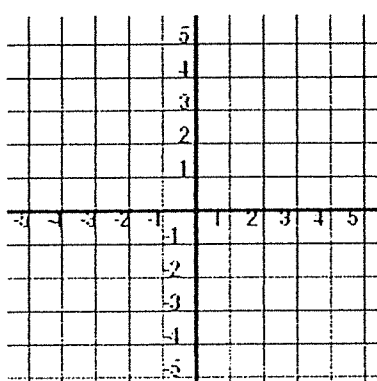
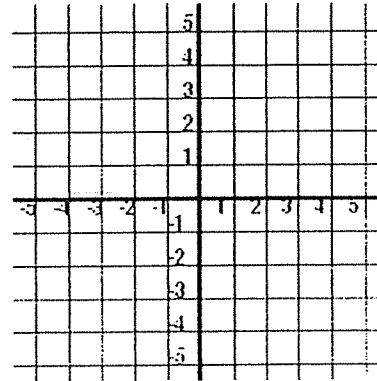
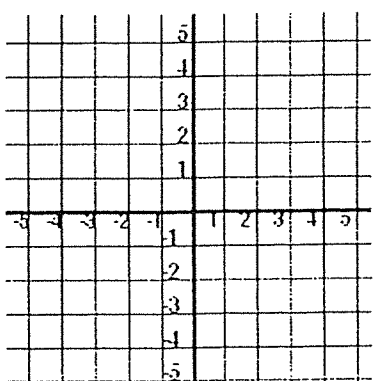
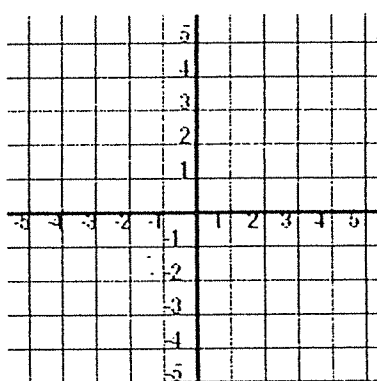
a. x-axis reflection
up 3 units

EC b. y-axis reflection
down 17 units

c. x-axis reflection
y-axis reflection

EC d. x-axis reflection
left 4 units

5. For each of the following:
- (i) Identify the parent function.
 - (ii) Identify the transformation(s) on the parent function.
 - (iii) Sketch an accurate graph of the transformed function (remember to use the critical points).
 - (iv) State the domain and range of the transformed function.

<p>a. $y = (-x)^2 + 2$</p> 	<p>b. $y = -\sqrt{x}$</p> 	<p>c. $y = -x^2 + 3.25$</p> 
<p>d. $y = -x^2 + 4$</p> 	<p>e. $y = -2^x$</p> 	<p><i>EC</i> f. $y = -\sqrt{-x} - 1$</p> 