

# HOMESWORK: TRANSFORMATIONS

NAME: \_\_\_\_\_ DAY 5 DUE: \_\_\_\_\_

1. Match each graph to the function.

## Exercises

In Problems 7–18, match each graph to one of the following functions.

A.  $y = x^2 + 2$

B.  $y = -x^2 + 2$

C.  $y = |x| + 2$

D.  $y = -|x| + 2$

E.  $y = (x - 2)^2$

F.  $y = -(x + 2)^2$

G.  $y = |x - 2|$

H.  $y = -|x + 2|$

I.  $y = 2x^2$

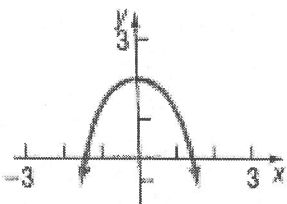
J.  $y = -2x^2$

K.  $y = 2|x|$

L.  $y = -2|x|$

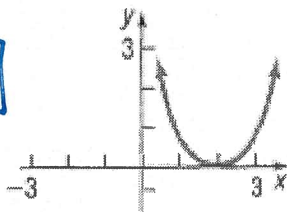
7.

**B**



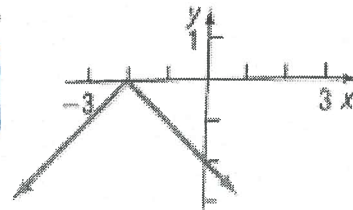
8.

**E**



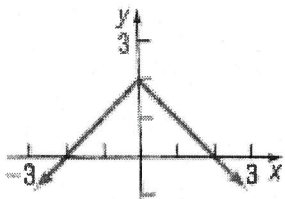
9.

**H**



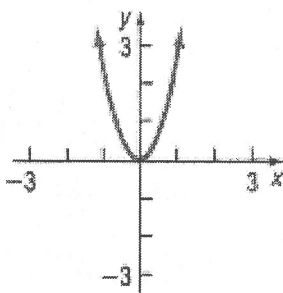
10.

**D**



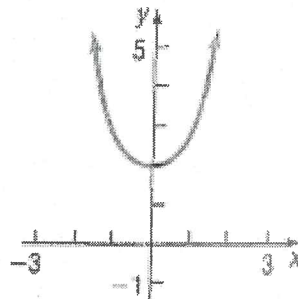
11.

**I**



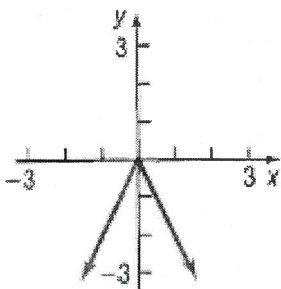
12.

**A**



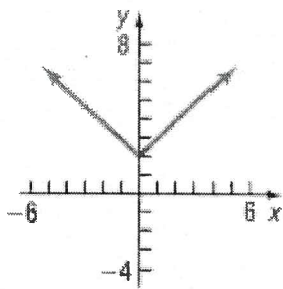
13.

**L**



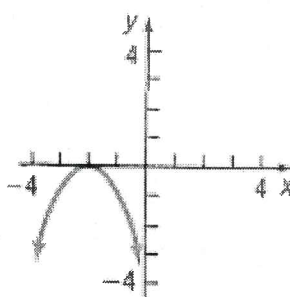
14.

**C**



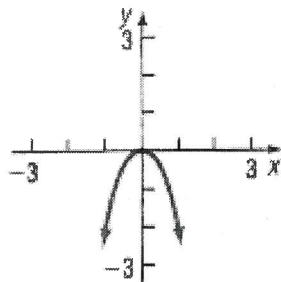
15.

**F**



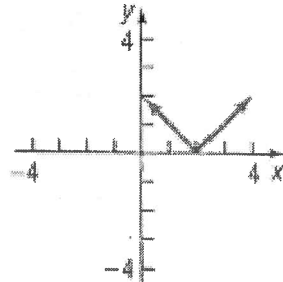
16.

**J**



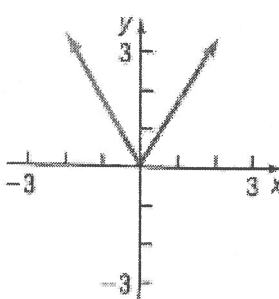
17.

**G**



18.

**K**



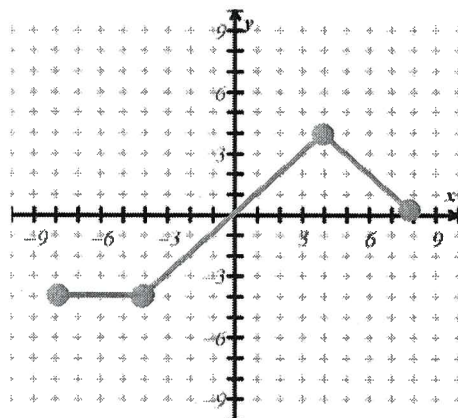
If  $y = x^3$  is transformed as described below, write the new function.

2. Shifted right 4 units $y = (x+4)^3$	3. Shifted up 4 units $y = x^3 + 4$
4. Reflected about the y-axis $y = -x^3$	5. Vertically stretched by a factor of 4 $y = 4x^3$

If  $y = \sqrt{x}$  is transformed as described below, write the new function.

6. Shifted up 2 units. Reflect about the x-axis. Reflect about the y-axis. $y = -(\sqrt{-x} + 2)$ $y = -\sqrt{-x} - 2$	7. Reflect about the x-axis. Shift up 2 units. Shift left 3 units. $y = -\sqrt{x+3} + 2$
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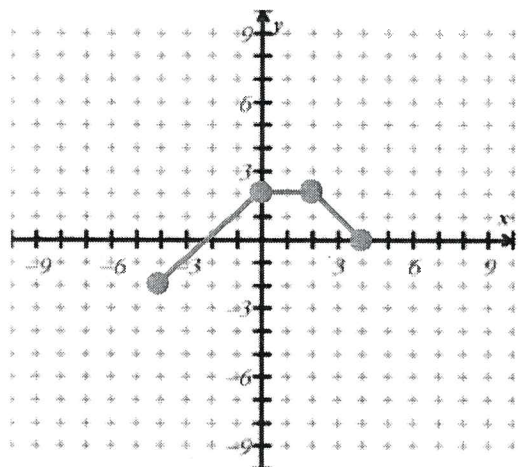
For #8 and #9, the graph of a function,  $f$ , is illustrated in the figure.



8. Draw the graph of $y =  f(x) $ 	9. $y = f( x )$ $f(-4) = f(4) = 4$ $f(-8) = f(8) = 0$ 
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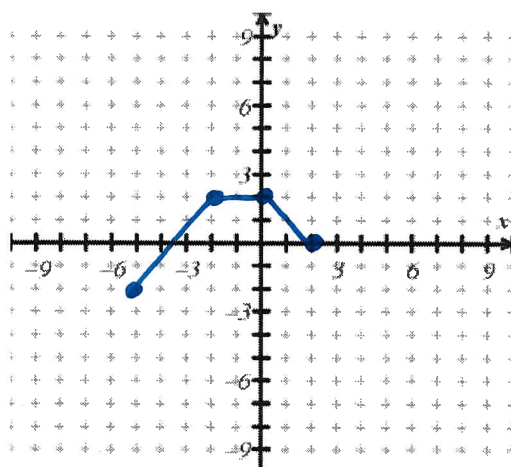
10. The graph of  $f$  is illustrated. Graph the following functions.

Graph of  $f(x)$

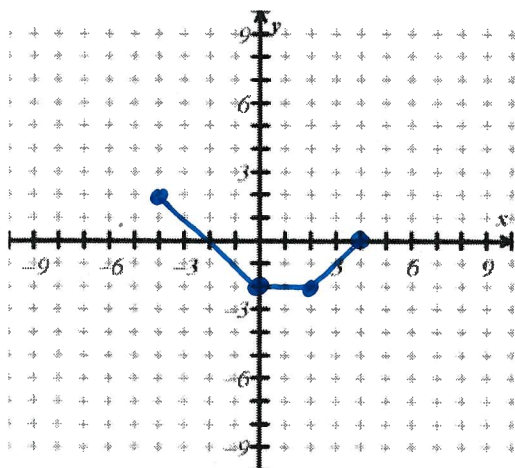


a)  $G(x) = f(x + 2)$

*Left 2*

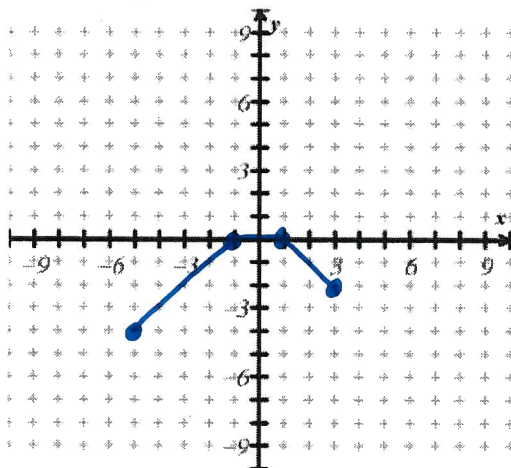


b)  $P(x) = -f(x)$

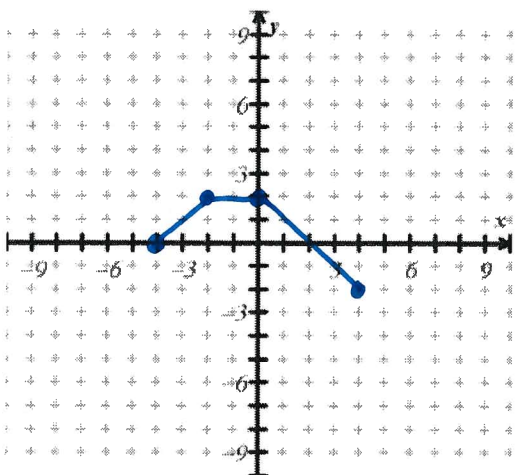


c)  $H(x) = f(x + 1) - 2$

*LI D2*



d)  $g(x) = f(-x)$



e)  $h(x) = f(2x)$

