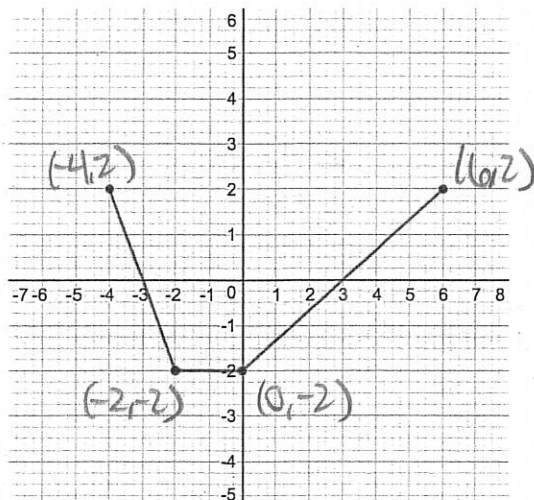


§P.7 & P.8: Transformations of Functions

1.] Suppose we have a piecewise linear function $f(x)$ defined by the graph below:

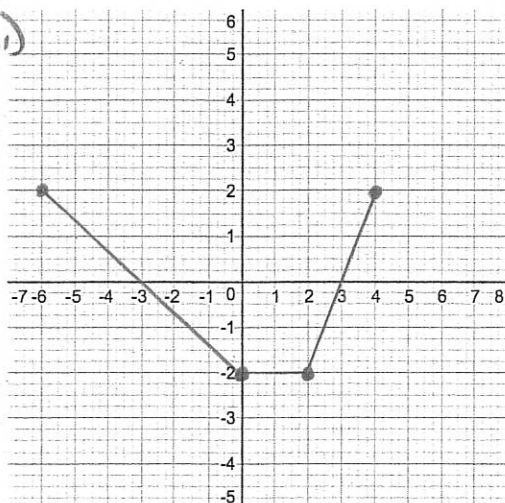


On the pieces of graph paper provided below, sketch the transformed functions:

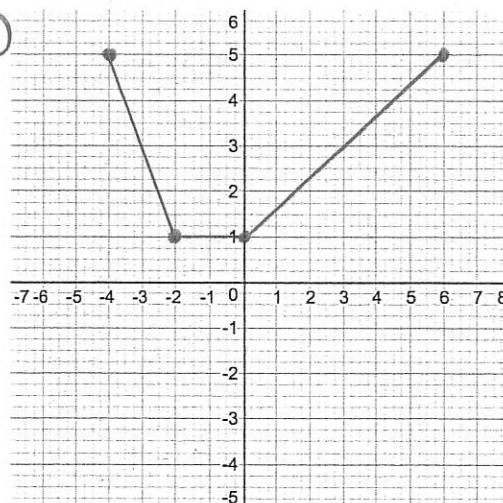
- a.) $y = f(-x)$ - flip about y-axis
 b.) $y = f(x) + 3$ - shift up 3 units
 c.) $y = -f(x+2)$ - flip over x, shift left 2 units
 d.) $y = f(2x) - 1$ - shrink horizontally, shift down 1 unit.

a.)

- $(-4, 2) \rightarrow (4, 2)$
 $(-2, -2) \rightarrow (2, -2)$
 $(0, -2) \rightarrow (0, -2)$
 $(6, 2) \rightarrow (-6, 2)$



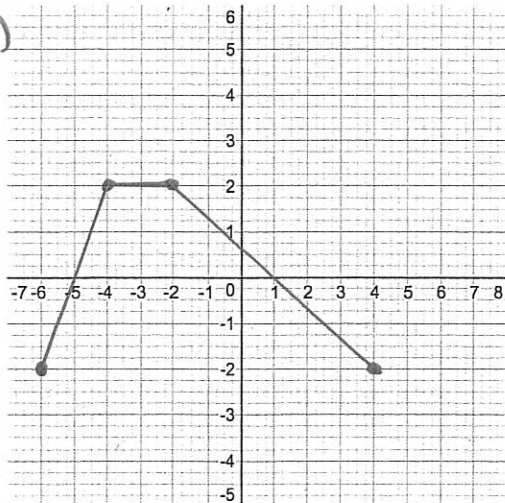
b.)



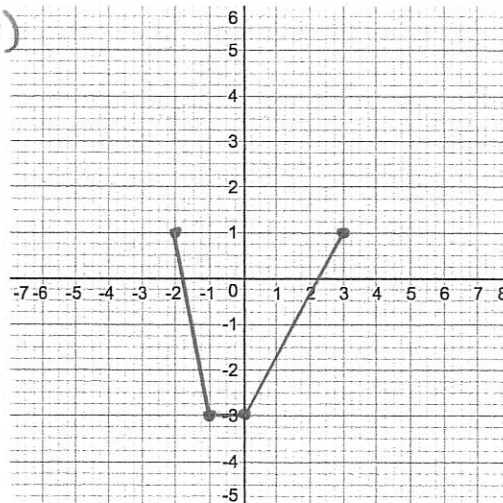
- $(-4, 2) \rightarrow (-4, 5)$
 $(-2, -2) \rightarrow (-2, 1)$
 $(0, -2) \rightarrow (0, 1)$
 $(6, 2) \rightarrow (6, 5)$

c.)

- $(-4, 2) \rightarrow (-6, -2)$
 $(-2, -2) \rightarrow (-4, 2)$
 $(0, -2) \rightarrow (-2, 2)$
 $(6, 2) \rightarrow (4, -2)$



d.)



- $(-4, 2) \rightarrow (-2, 1)$
 $(-2, -2) \rightarrow (-1, -3)$
 $(0, -2) \rightarrow (0, -3)$
 $(6, 2) \rightarrow (3, 1)$

2.] Consider the list of functions below. Match each function to its graph.

(A) $f(x) = -(x - 2)^3$

(B) $f(x) = -3 - (x + 1)^2$

(C) $f(x) = 4 - (x - 2)^2$

(D) $f(x) = -|x + 3| - 2$

(E) $f(x) = -(x + 1)^3$

(F) $f(x) = \frac{1}{2}\sqrt{x}$

(G) $f(x) = 2\sqrt{x}$

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

