**3**. [9 points]   A portion of the graph of a function $f$ is shown below, along with three graphs obtained from $f$ by one or more transformations. Below each of the three graphs is a list of possible formulas for that graph. Find the <u>one</u> correct formula for each graph, and write the corresponding letter in the answer blank provided.

Note that the zeros of each graph are labeled and that the scales on both the vertical and horizontal axes are the same for all the graphs shown.
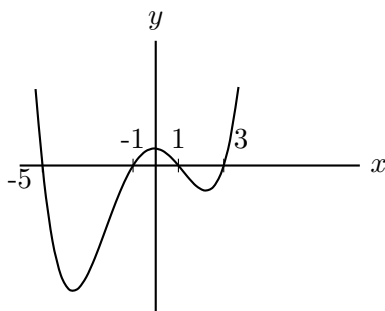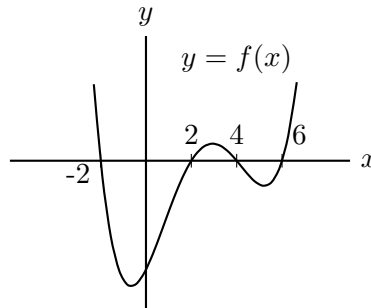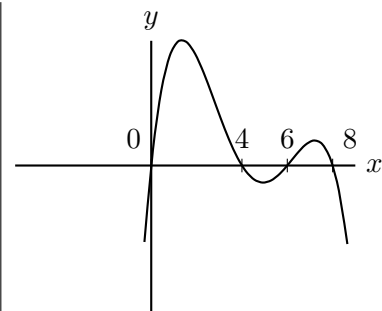




**Answer:** _____ **H**

A. $f(x - 1)$

B. $f(x - 2)$

C. $f(x - 3)$

D. $f(-(x - 2))$

E. $f(-(x - 3))$

F. $f(x + 1)$

G. $f(x + 2)$

H. $\boxed{f(x + 3)}$

I. $-f(x + 1)$

J. $-f(x + 3)$
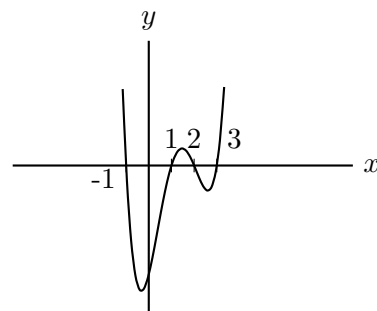
**Answer:** _____ **E**

A. $f(x - 1)$

B. $f(x + 1)$

C. $f(\frac{1}{3}x)$

D. $f(\frac{1}{2}x)$

E. $\boxed{f(2x)}$

F. $f(3x)$

G. $f(2(x + 1))$

H. $f(\frac{1}{2}(x - 1))$

I. $f(2(x - 1))$

J. $f(\frac{1}{2}(x + 1))$

**Answer:** _____ **E**

A. $f(x + 2)$

B. $f(x - 2)$

C. $f(-(x - 2))$

D. $-f(x + 1)$

E. $\boxed{-f(x - 2)}$

F. $-f(x + 2)$

G. $-f(x)$

H. $f(-(x + 2))$

I. $-f(-x)$

J. $f(-(x - 4))$