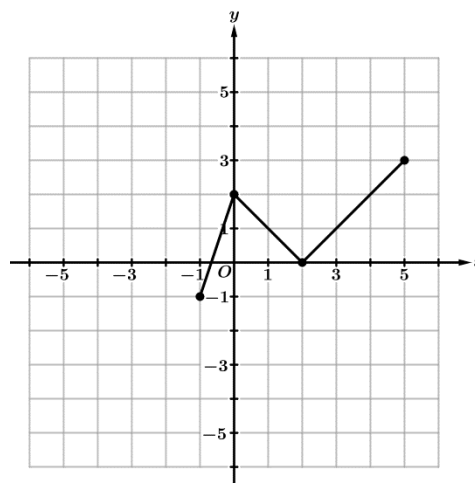**Graph of f**



**Graph of g**

1. The graph of $y = f(x)$, consisting of three line segments, is shown above for $-3 \le x \le 3$. The graph of $y = g(x)$ is the result of transforming the graph of $f$. Which of the following gives the transformation from $f$ to $g$?

(A) $g(x) = f(x - 2) - 1$

(B) $g(x) = f(x + 2) - 1$

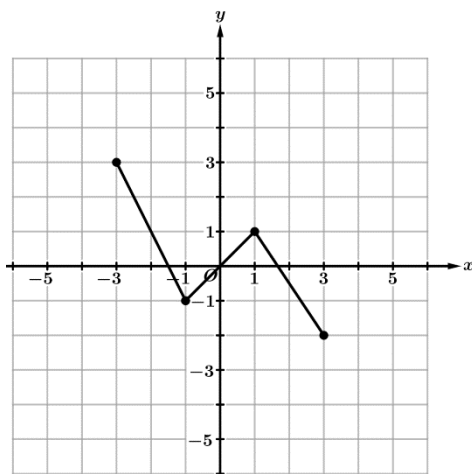(C) $g(x) = f(x - 2) + 1$

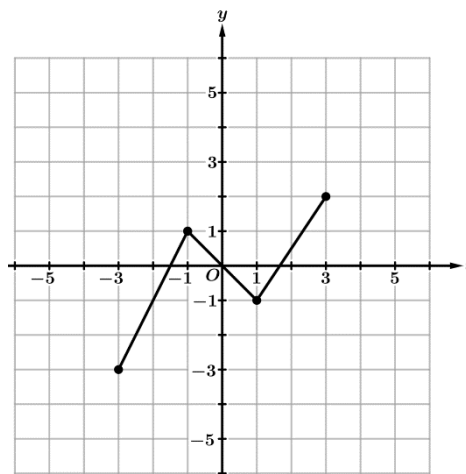(D) $g(x) = f(x + 2) + 1$



**Graph of f**



**Graph of g**

2. The graph of $y = f(x)$, consisting of three line segments, is shown above for $-3 \le x \le 3$. The graph of $y = g(x)$ is the result of transforming the graph of $f$. Which of the following gives the transformation from $f$ to $g$?

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

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

(C) $g(x) = f(x - 1)$

(D) $g(x) = f(x) - 1$

| $x$ | $-2$ | $0$ | $1$ | $3$ |
|---|---|---|---|---|
| $f(x)$ | $4$ | $-3$ | $-1$ | $2$ |

| $x$ | $-5$ | $-3$ | $-2$ | $0$ |
|---|---|---|---|---|
| $g(x)$ | $6$ | $-1$ | $1$ | $4$ |

3. The tables above give values of $f$ and $g$ at selected values of $x$. The graph of $y = g(x)$ is the result of transforming the graph of $f$. Which of the following could be the transformation from $f$ to $g$?

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

(B) $g(x) = f(x - 3) + 2$

(C) $g(x) = f(x + 3) - 2$

(D) $g(x) = f(x + 3) + 2$

| $x$ | $-3$ | $0$ | $2$ | $4$ |
|---|---|---|---|---|
| $f(x)$ | $1$ | $5$ | $0$ | $-2$ |

| $x$ | $3$ | $0$ | $-2$ | $-4$ |
|---|---|---|---|---|
| $g(x)$ | $2$ | $10$ | $0$ | $-4$ |

4. The tables above give values of $f$ and $g$ at selected values of $x$. The graph of $y = g(x)$ is the result of transforming the graph of $f$. Which of the following could be the transformation from $f$ to $g$?

(A) $g(x) = \dfrac{1}{2}f(-x)$   (B) $g(x) = f(x - 6) + 1$   (C) $g(x) = -2f(x)$   (D) $g(x) = 2f(-x)$

| $x$ | $-2$ | $0$ | $2$ | $4$ |
|---|---|---|---|---|
| $f(x)$ | $3$ | $-4$ | $2$ | $0$ |

| $x$ | $-1$ | $0$ | $1$ | $2$ |
|---|---|---|---|---|
| $g(x)$ | $6$ | $-8$ | $4$ | $0$ |

5. The tables above give values of $f$ and $g$ at selected values of $x$. The graph of $y = g(x)$ is the result of transforming the graph of $f$. Which of the following could be the transformation from $f$ to $g$?

(A) $g(x) = \dfrac{1}{2}f\left(\dfrac{x}{2}\right)$   (B) $g(x) = \dfrac{1}{2}f(2x)$   (C) $g(x) = 2f\left(\dfrac{x}{2}\right)$   (D) $g(x) = 2f(2x)$

**Directions:** Use the information below for problems 6 – 9.

The function $y = f(x)$ has domain $-4 \leq x \leq 6$ and range $0 \leq y \leq 10$.

6. The graph of $y = g(x)$ is the result of the transformation $g(x) = 2f(x - 3) + 1$. Which of the following gives the domain of $g(x)$?

(A) $-7 \leq x \leq 3$        (B) $-1 \leq x \leq 9$        (C) $-3 \leq x \leq 7$        (D) $-7 \leq x \leq 13$

7. The graph of $y = g(x)$ is the result of the transformation $g(x) = 2f(x - 3) + 1$. Which of the following gives the range of $g(x)$?

(A) $-1 \leq y \leq 4$        (B) $-3 \leq y \leq 7$        (C) $1 \leq y \leq 21$        (D) $3 \leq y \leq 13$

8. The graph of $y = h(x)$ is the result of the transformation $h(x) = -3f(2x) - 4$. Which of the following gives the domain of $h(x)$?

(A) $-22 \leq x \leq 8$        (B) $-8 \leq x \leq 12$        (C) $-2 \leq x \leq 3$        (D) $0 \leq x \leq 5$

9. The graph of $y = h(x)$ is the result of the transformation $h(x) = -3f(2x) - 4$. Which of the following gives the range of $h(x)$?

(A) $-34 \leq y \leq -4$        (B) $0 \leq y \leq 5$        (C) $0 \leq y \leq 10$        (D) $-4 \leq y \leq 6$

10. The graph of $y = k(x)$ is the result of the transformation $k(x) = 4f\left(\frac{x}{2}\right) + 1$. The point $(2, -3)$ on the graph of $f$ maps to which of the following points on the graph of $k$?

(A) $(1, -11)$        (B) $(1, -8)$        (C) $(4, -11)$        (D) $(4, -8)$

11. The graph of $y = p(x)$ is the result of the transformation $p(x) = -2f(x - 3) + 4$. The point $(4, 1)$ on the graph of $f$ maps to which of the following points on the graph of $p$?

(A) $(-4, 4)$        (B) $(1, 2)$        (C) $(7, -10)$        (D) $(7, 2)$