

Exercise 3

The graph of $y = f(x)$ is given. Match each equation with its graph and give reasons for your choices.

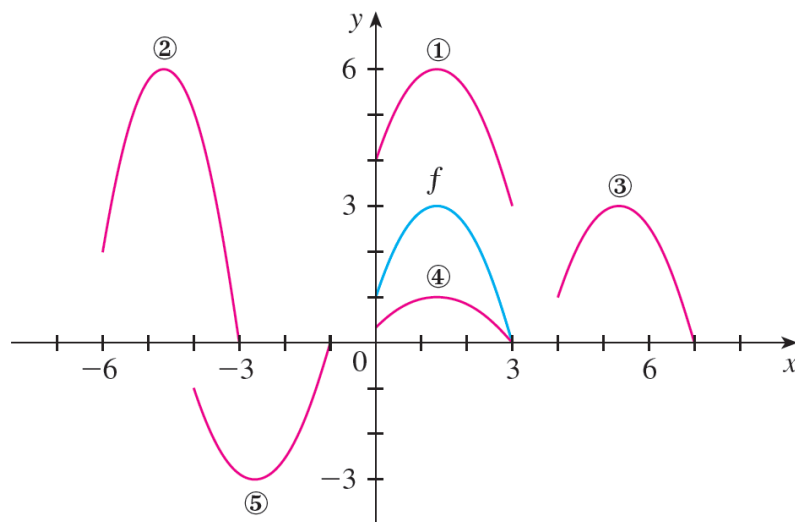
(a) $y = f(x - 4)$

(b) $y = f(x) + 3$

(c) $y = \frac{1}{3}f(x)$

(d) $y = -f(x + 4)$

(e) $y = 2f(x + 6)$



Solution

1. (b) because it's $f(x)$ but shifted up by 3 units.
2. (e) because it's $f(x)$ but vertically stretched by a factor of 2 and shifted to the left by 6 units.
3. (a) because it's $f(x)$ but shifted to the right by 4 units.
4. (c) because it's $f(x)$ but vertically shrunk by a factor of 3.
5. (d) because it's $f(x)$ but reflected about the x -axis and shifted to the left by 4 units.