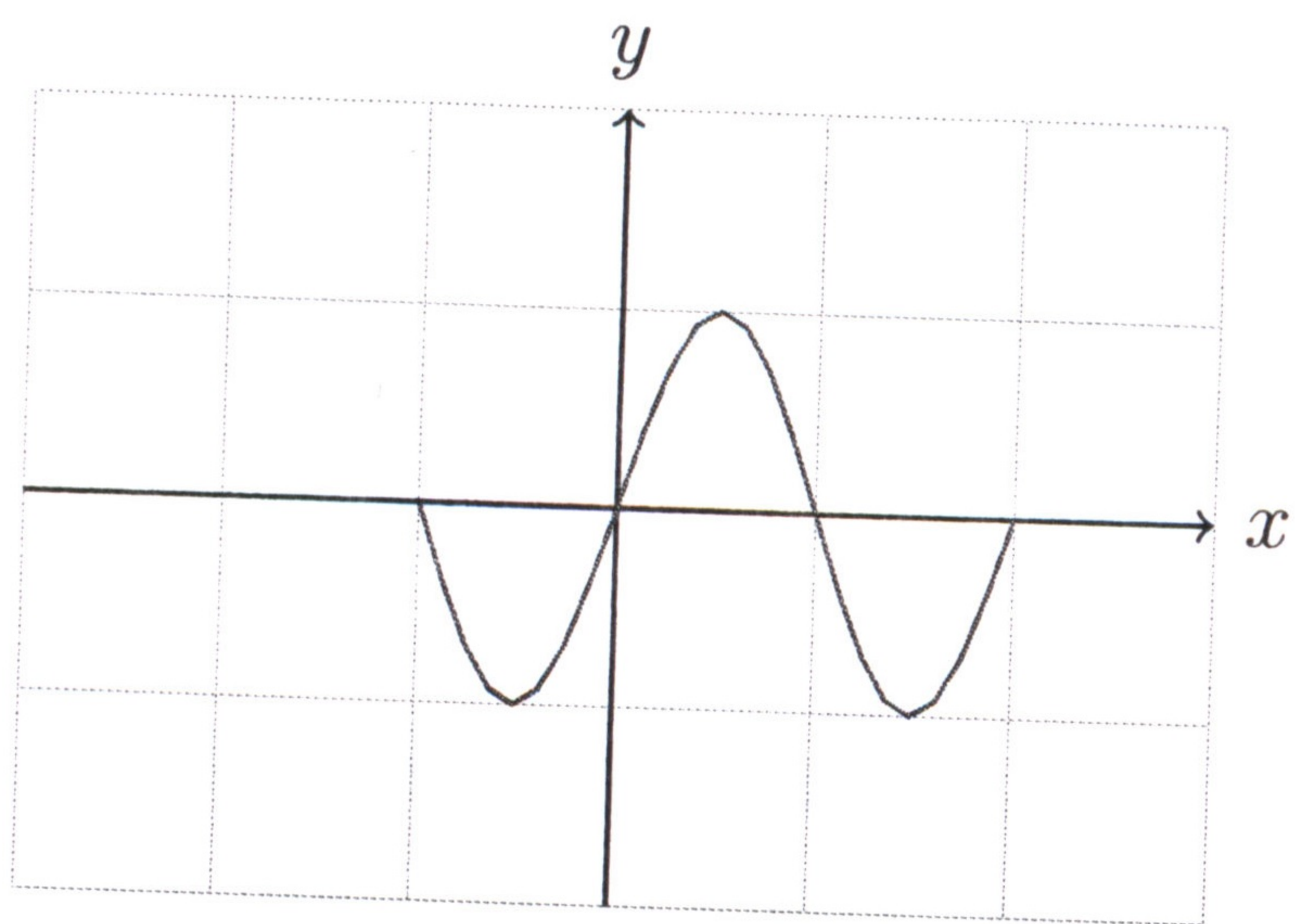
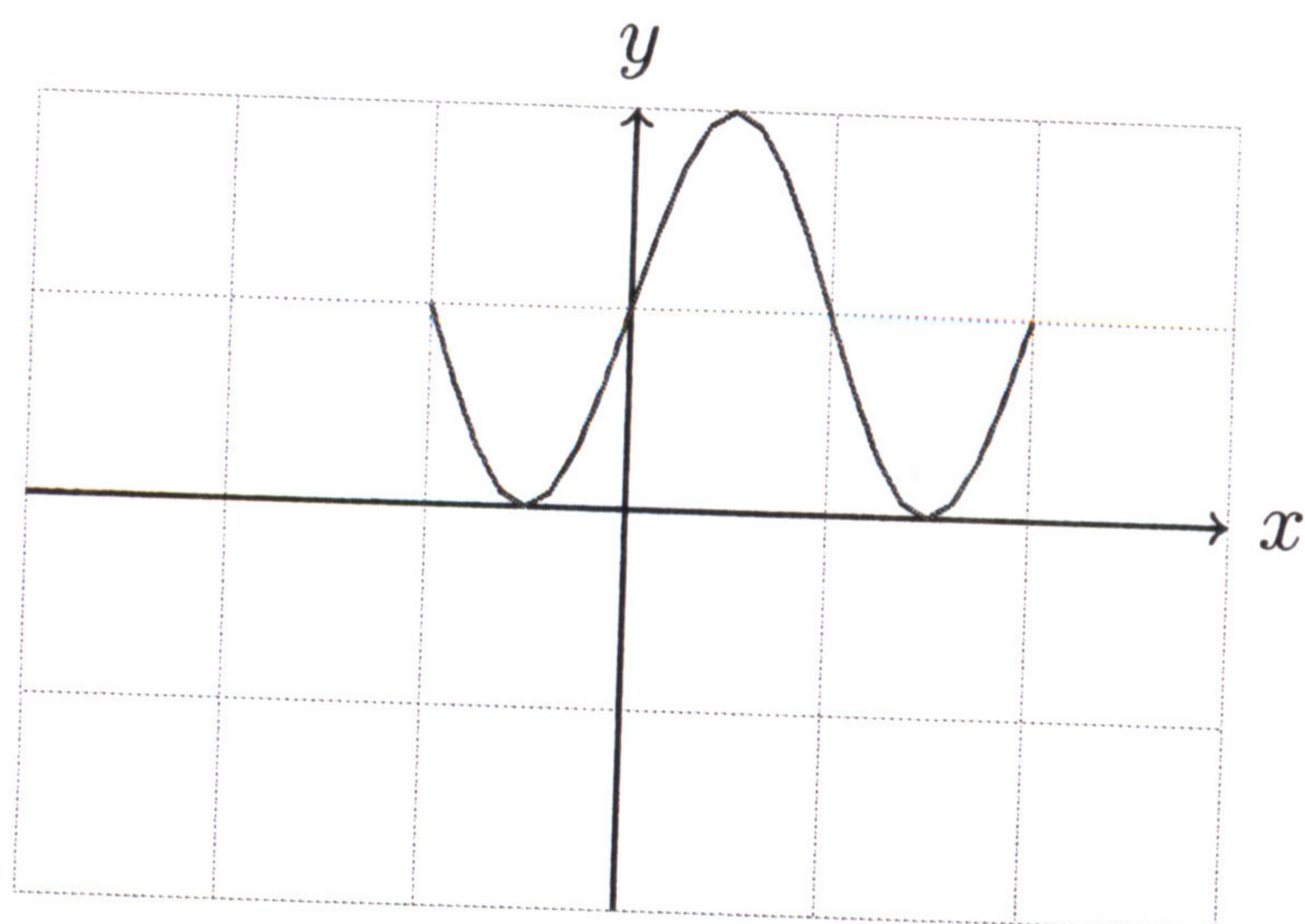


The graph of $y = f(x)$ is given.



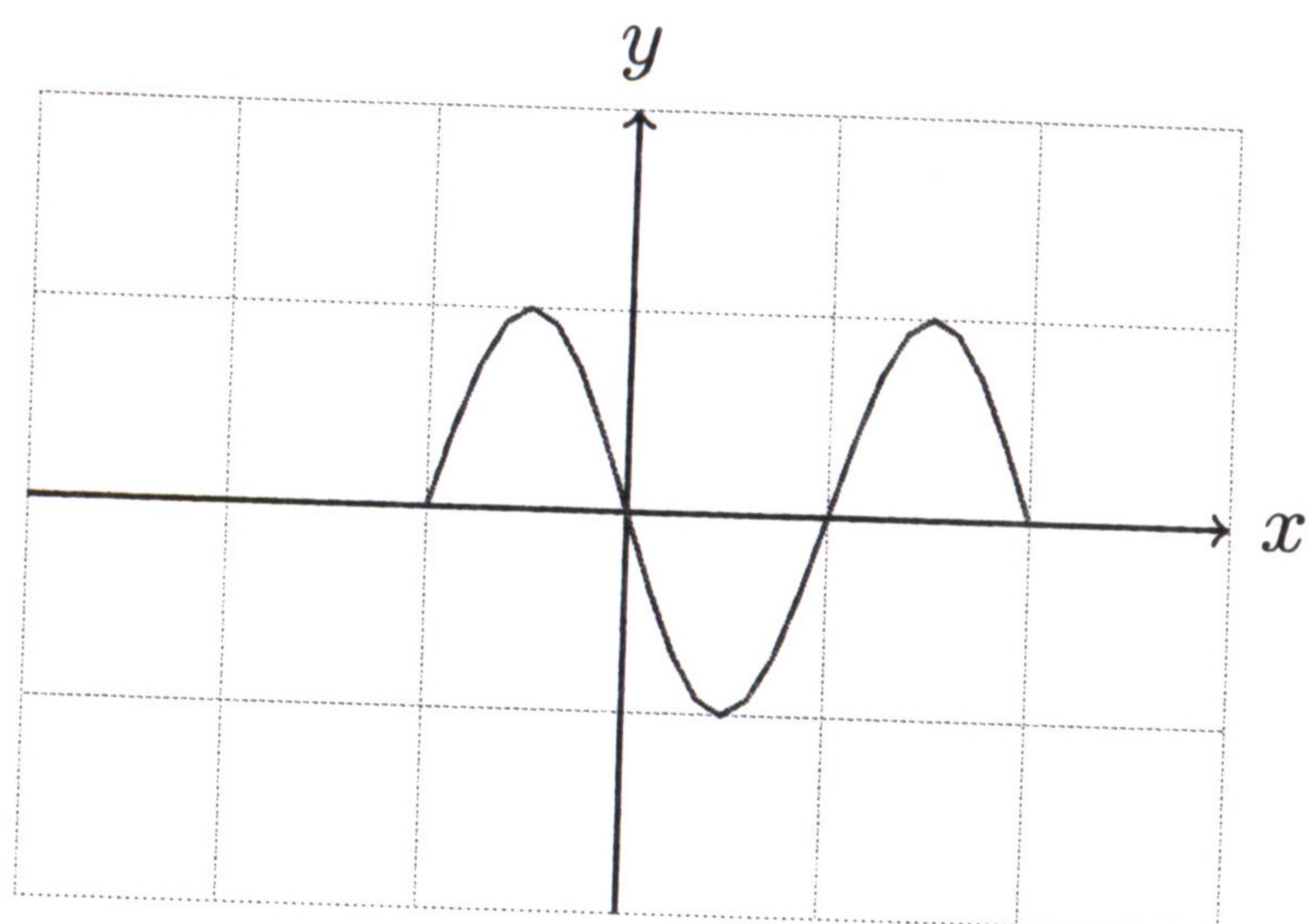
For the next 8 questions, choose the function for each of the graphs. An answer may be used more than once.

1.



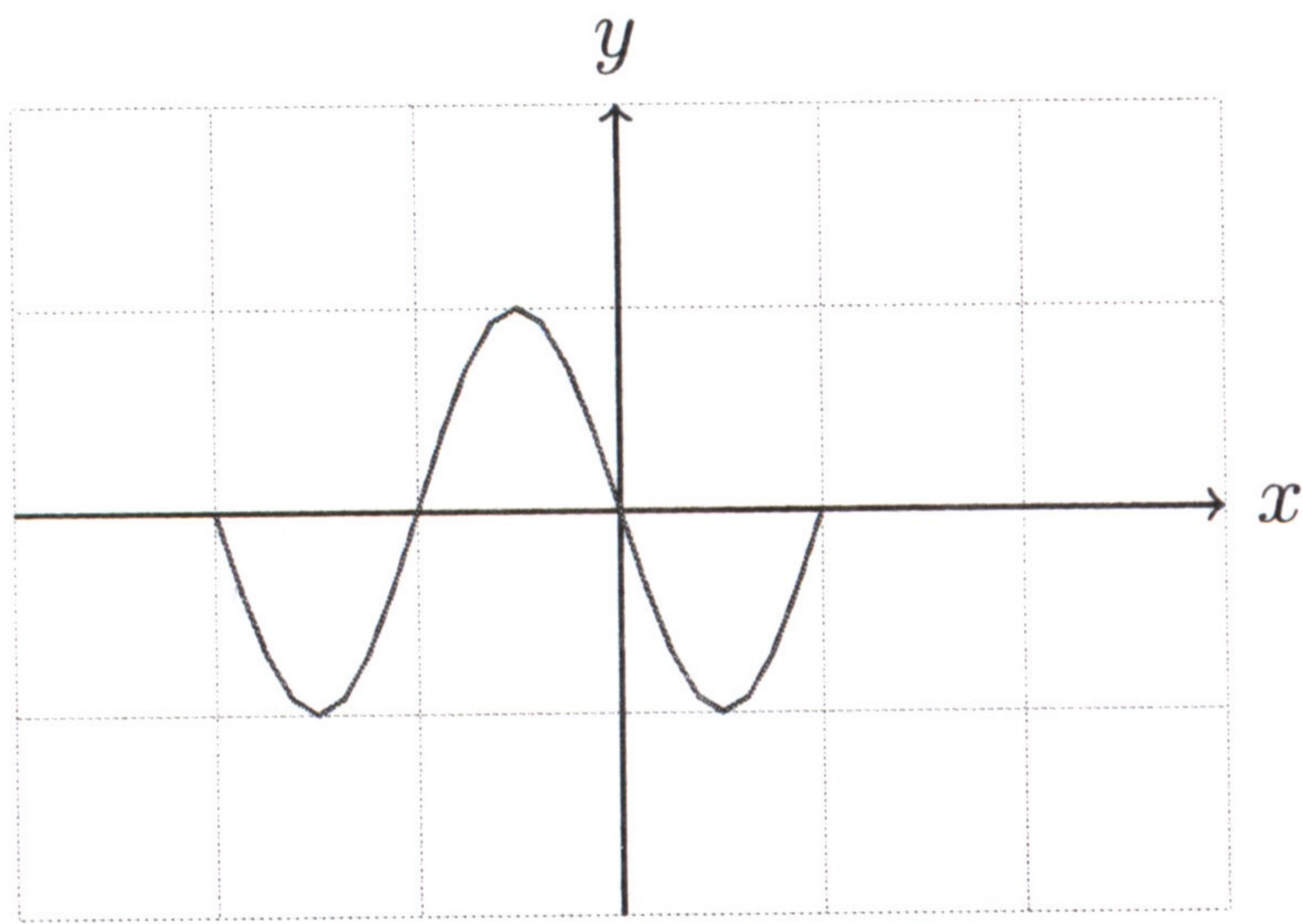
- A. $y = 2 |f(x)|$
- B. $y = f(|x|)$
- C. $y = f(2x)$
- D. $y = -f(x)$
- E. $y = f(\frac{x}{2})$
- F. $y = f(-x)$
- G. $y = f(x + 1)$
- H. $y = f(x) + 1$

2.



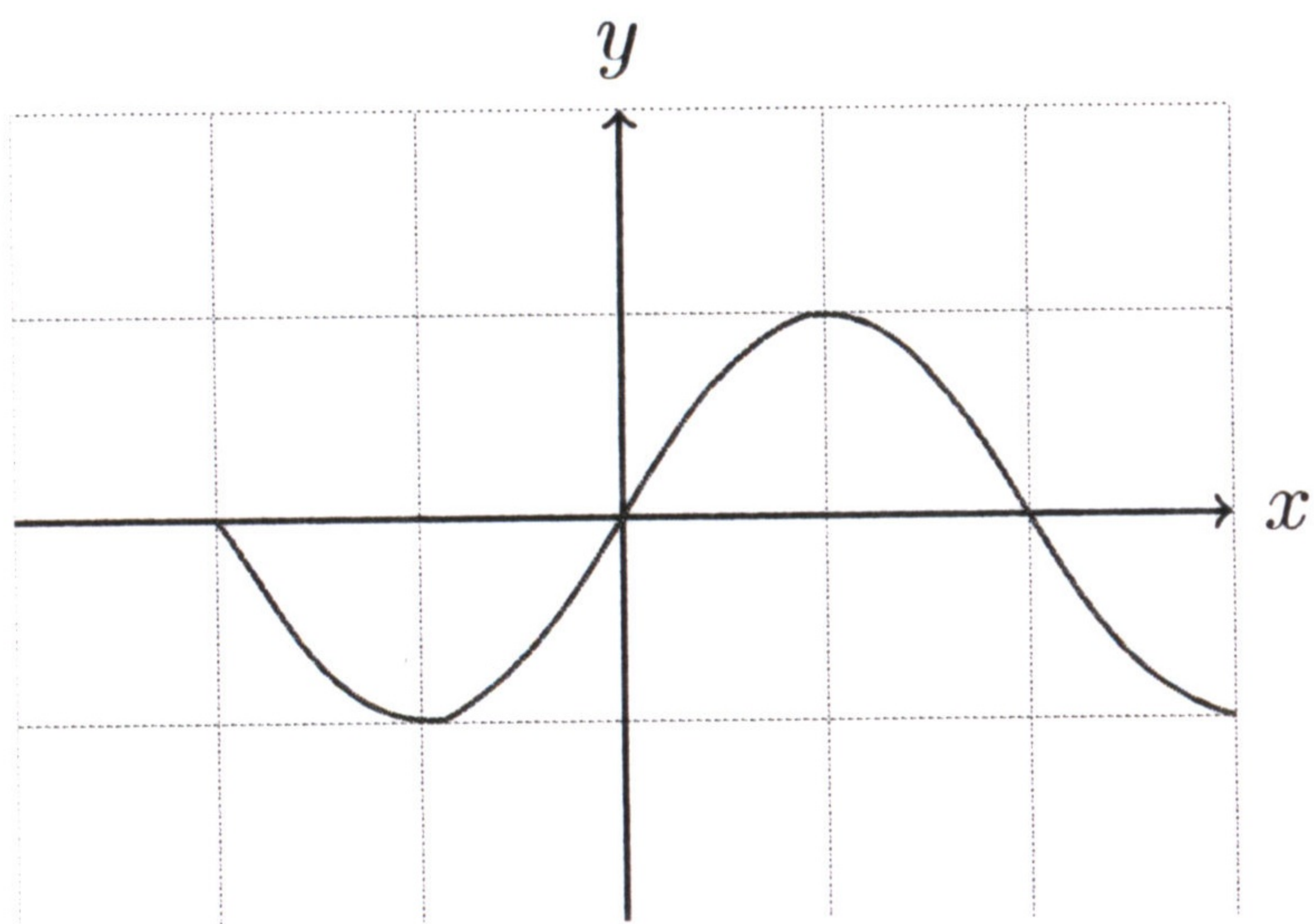
- A. $y = f(2x)$
- B. $y = -f(x)$
- C. $y = f(x) + 1$
- D. $y = 2 |f(x)|$
- E. $y = f(-x)$
- F. $y = f(|x|)$
- G. $y = f(\frac{x}{2})$
- H. $y = f(x + 1)$

3.



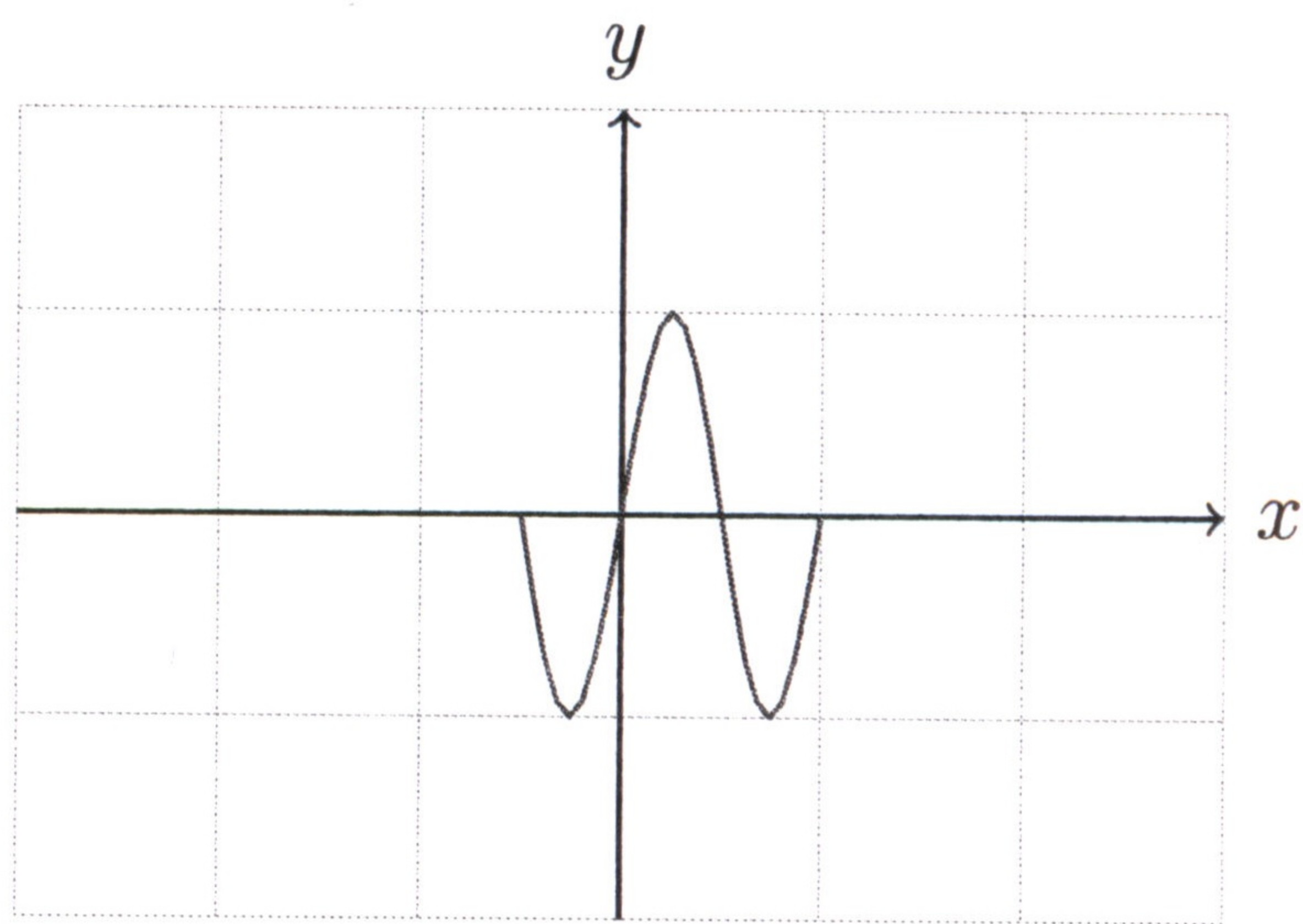
- A. $y = 2 |f(x)|$
- B. $y = f(x) + 1$
- C. $y = f(x + 1)$
- D. $y = -f(x)$
- E. $y = f(2x)$
- F. $y = f(|x|)$
- G. $y = f(1 - x)$
- H. $y = f(\frac{x}{2})$

4.



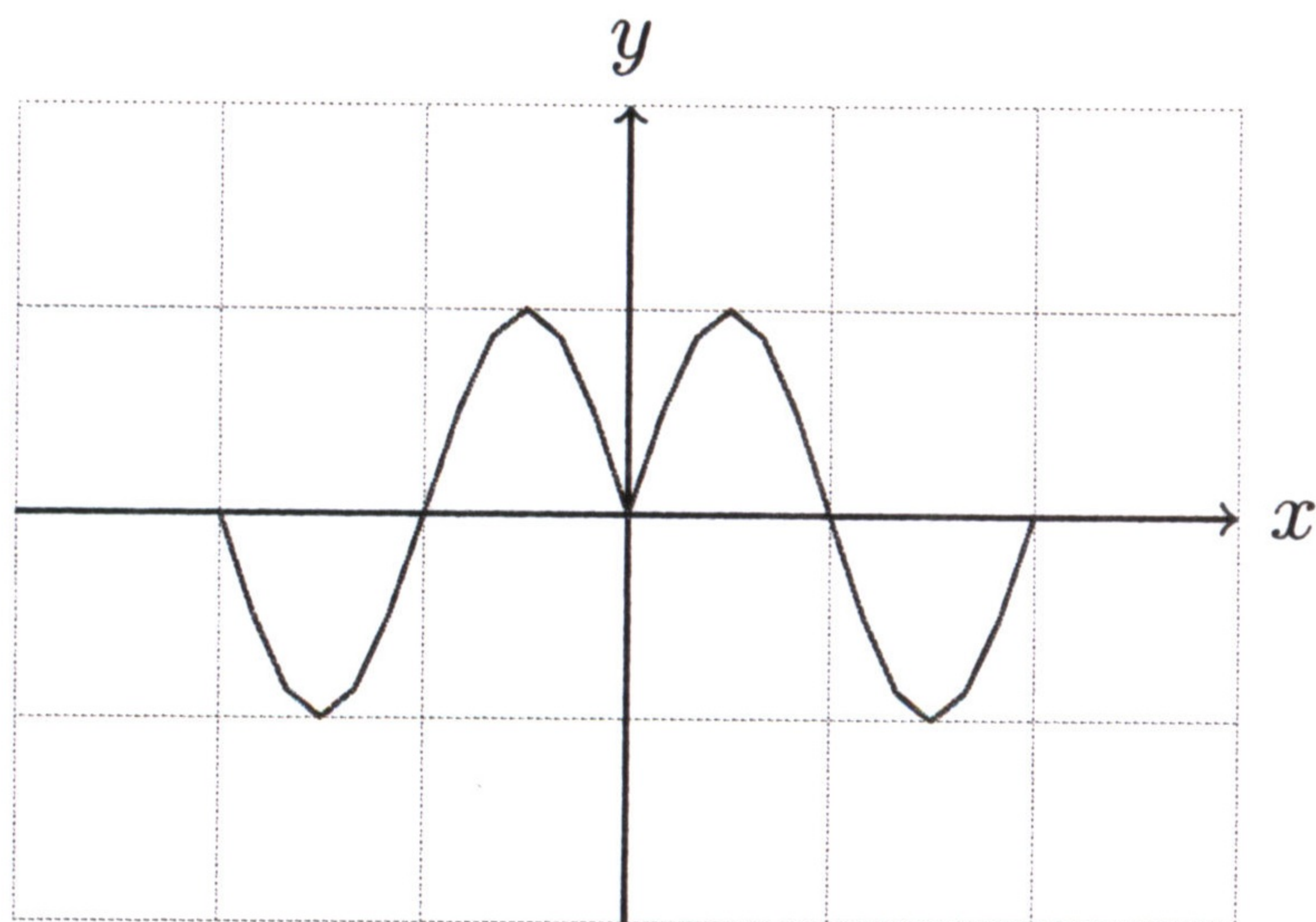
- A. $y = f(x) + 1$
- B. $y = 2 |f(x)|$
- C. $y = -f(x)$
- D. $y = f(x + 1)$
- E. $y = f(\frac{x}{2})$
- F. $y = f(|x|)$
- G. $y = f(2x)$
- H. $y = f(-x)$

5.



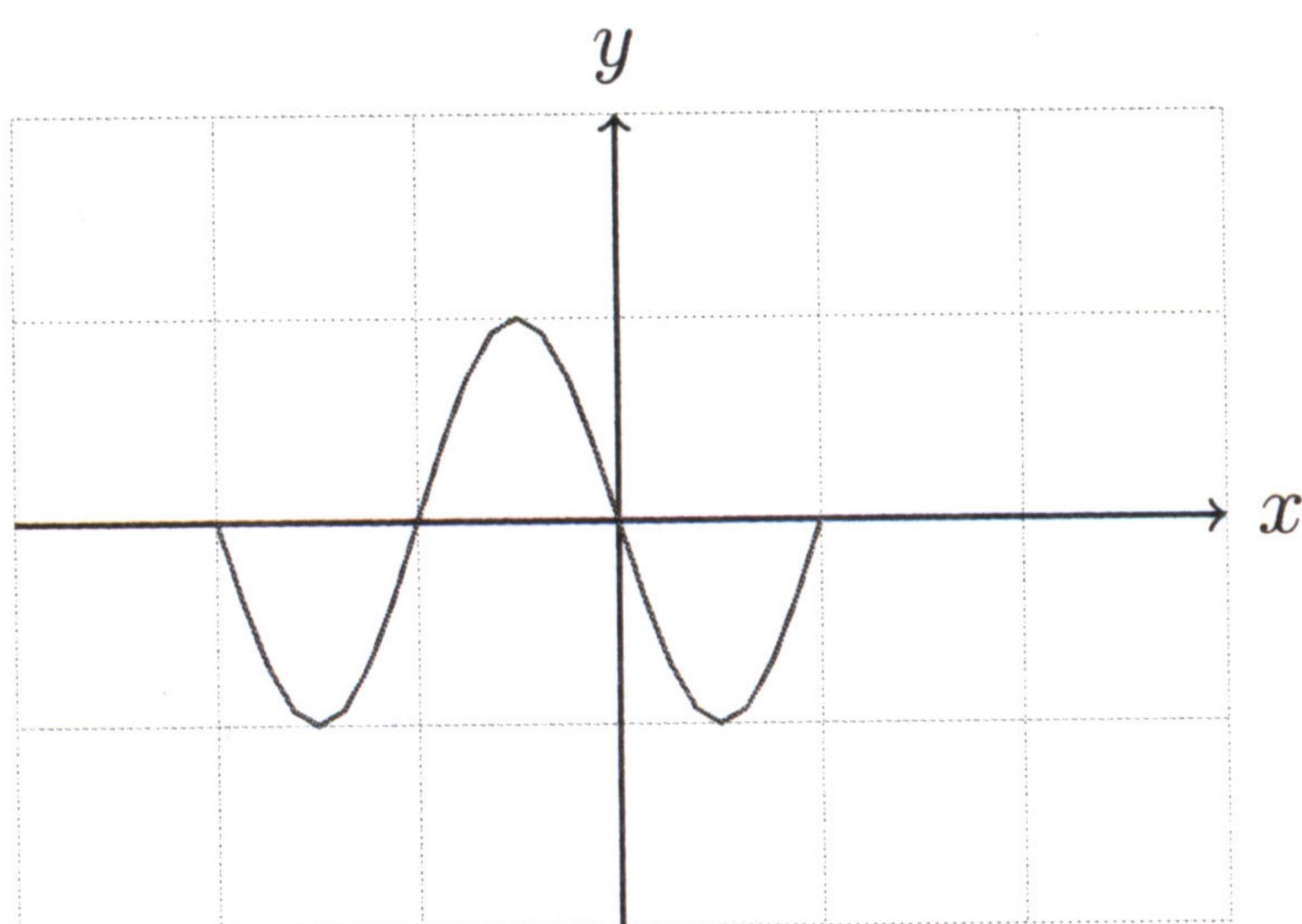
- A. $y = f(2x)$
- B. $y = 2 |f(x)|$
- C. $y = f(\frac{x}{2})$
- D. $y = f(x) + 1$
- E. $y = f(|x|)$
- F. $y = f(-x)$
- G. $y = f(x + 1)$
- H. $y = -f(x)$

6.



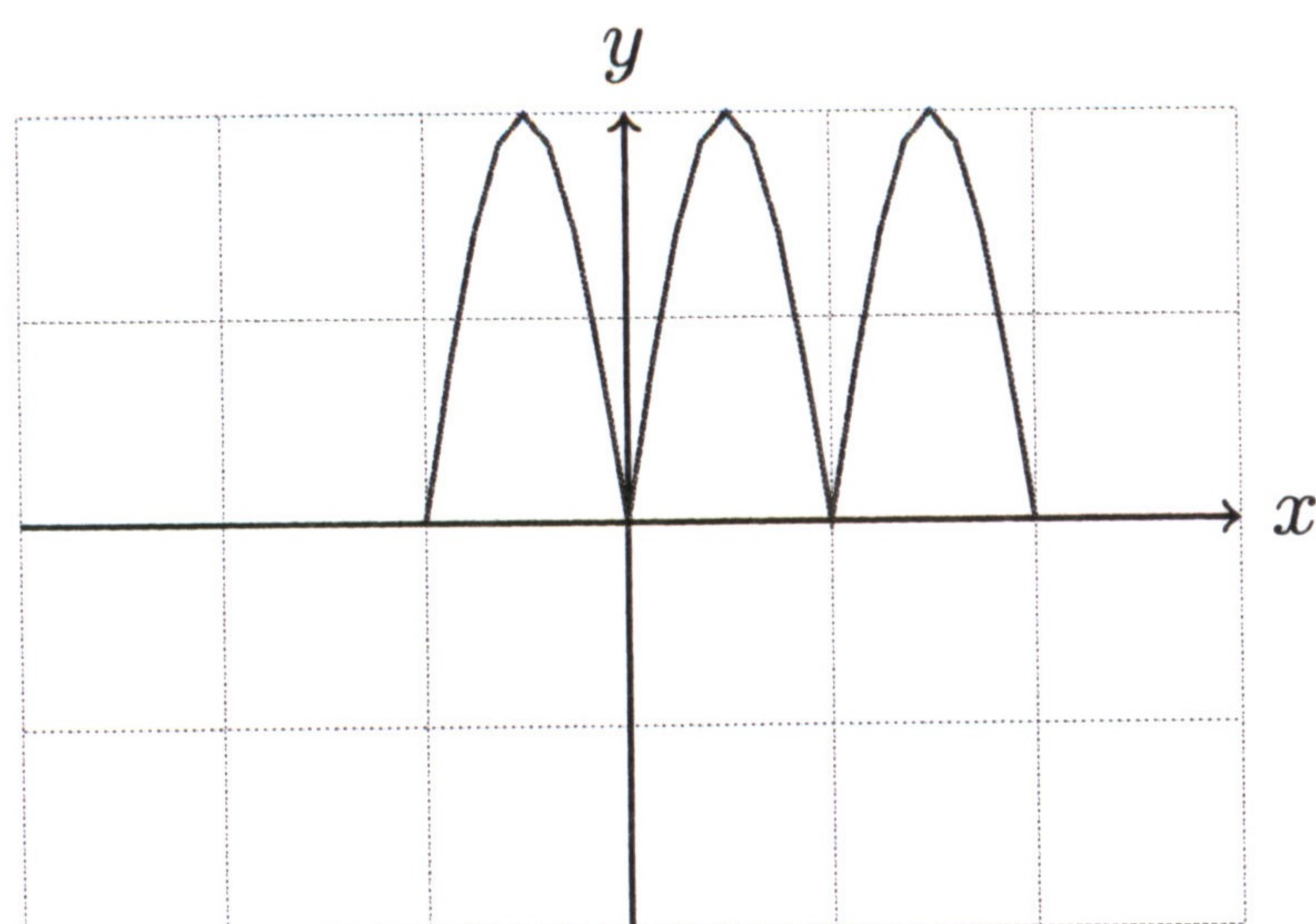
- A. $y = f(|x|)$
- B. $y = f(\frac{x}{2})$
- C. $y = -f(x)$
- D. $y = f(2x)$
- E. $y = f(x + 1)$
- F. $y = f(x) + 1$
- G. $y = f(-x)$
- H. $y = 2 |f(x)|$

7.



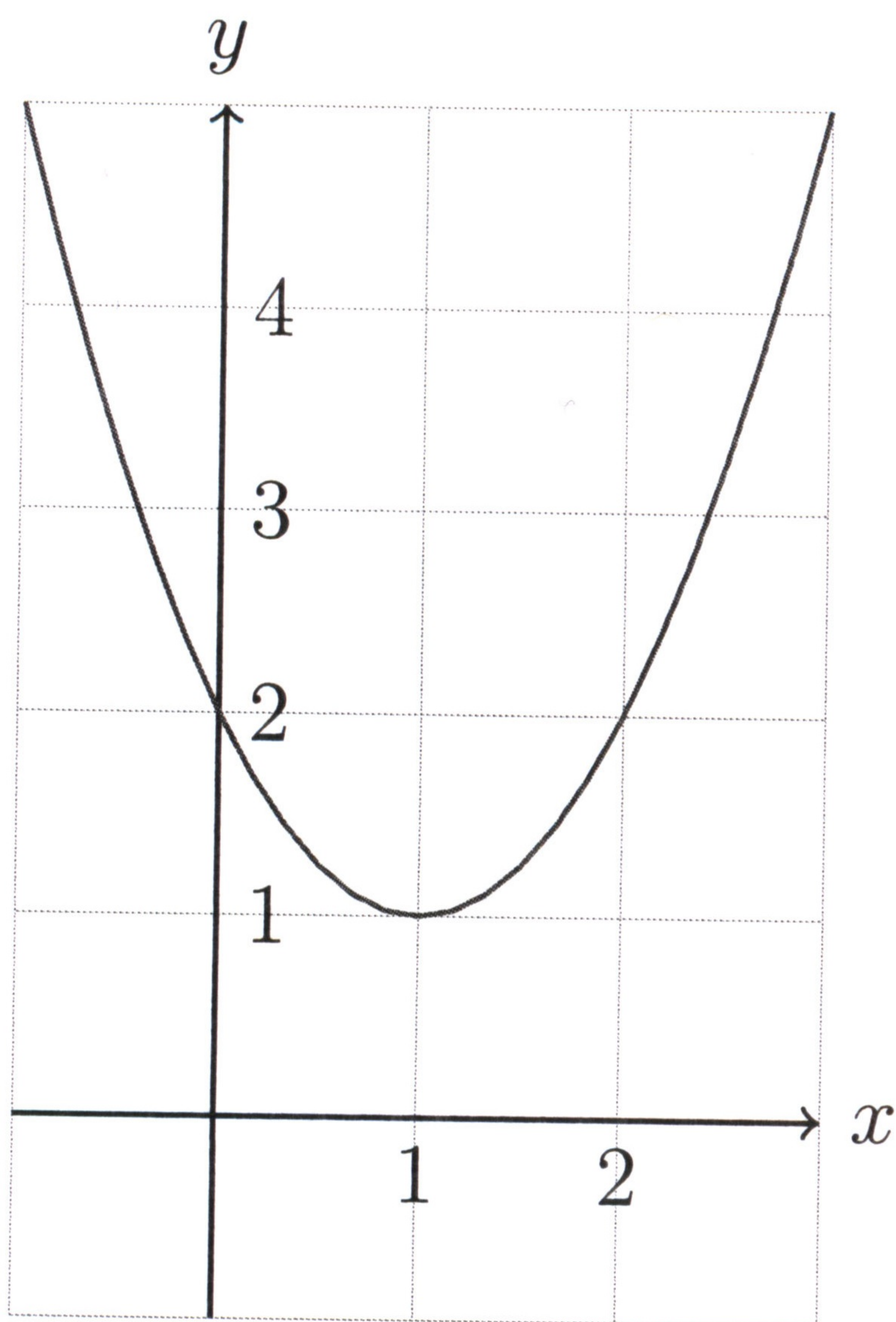
- A. $y = 2 |f(x)|$
- B. $y = f(-x)$
- C. $y = f(2x)$
- D. $y = -f(x)$
- E. $y = f(\frac{x}{2})$
- F. $y = f(x) + 1$
- G. $y = f(|x|)$
- H. $y = f(x + \frac{1}{2})$

8.



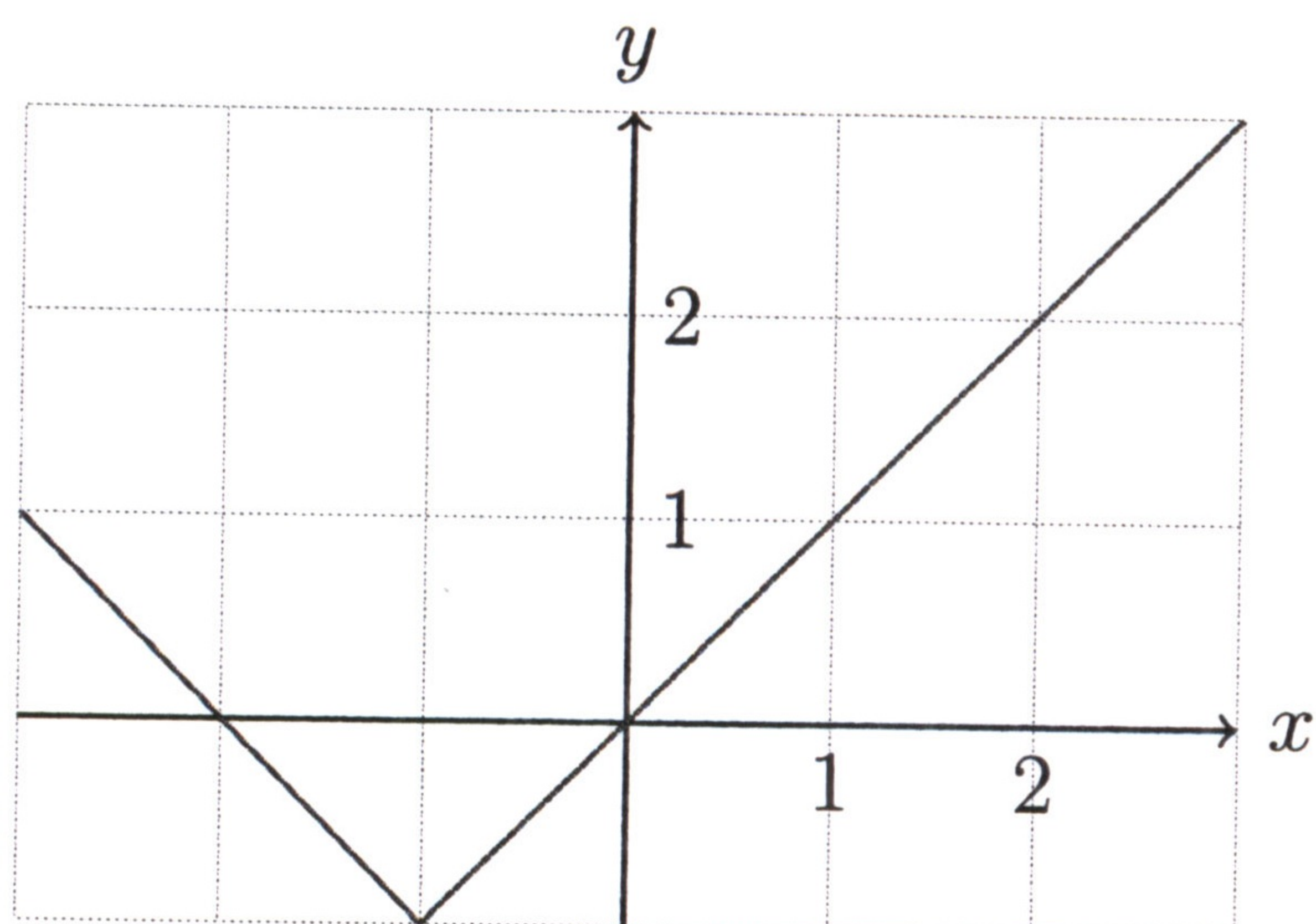
- A. $y = f(x + 1)$
- B. $y = f(-x)$
- C. $y = f(x) + 1$
- D. $y = -f(x)$
- E. $y = f(2x)$
- F. $y = 2 |f(x)|$
- G. $y = f(\frac{x}{2})$
- H. $y = f(|x|)$

9. Choose the equation that yields the given graph.



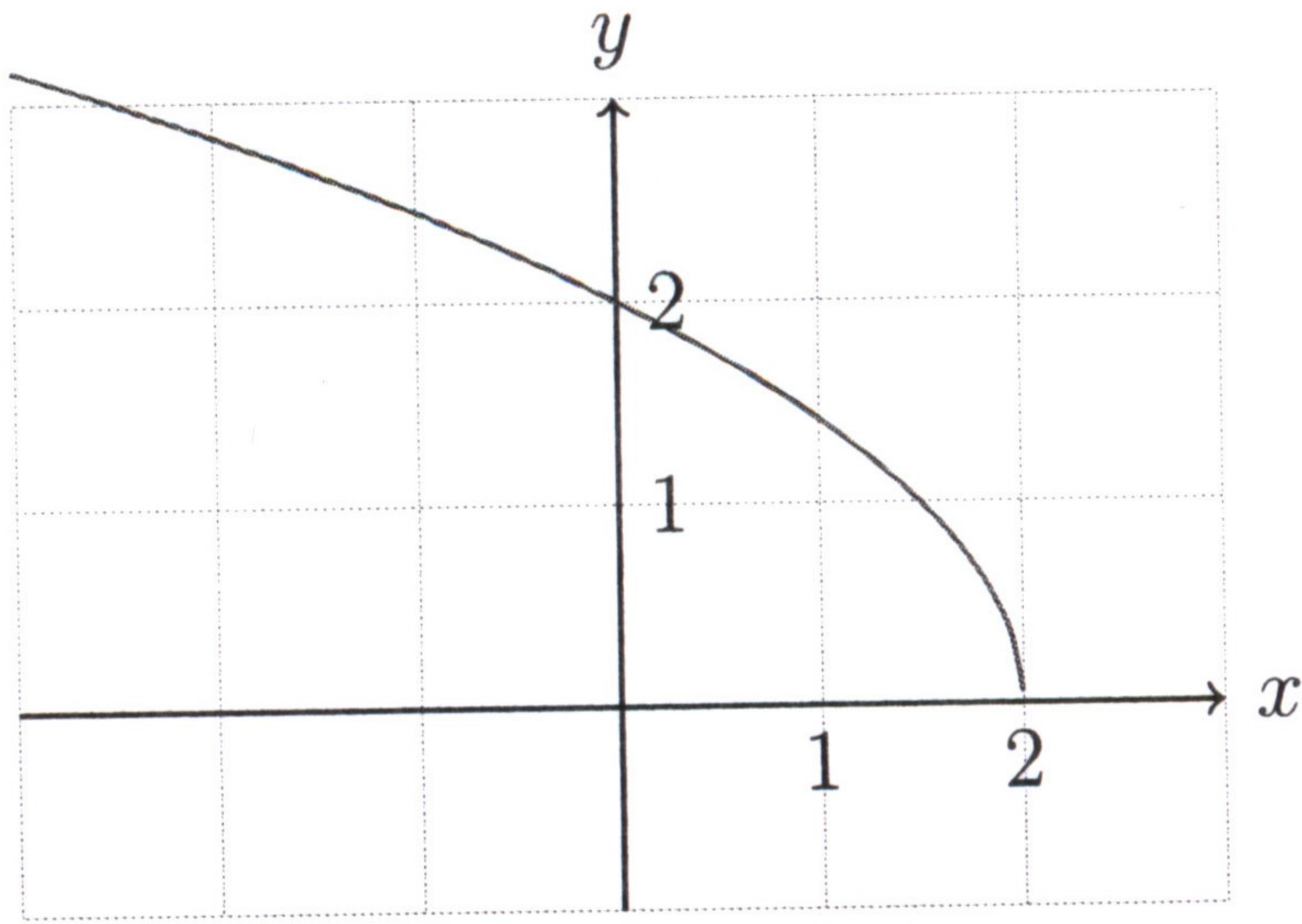
- A. $y = (x + 1)^2 + 1$
- B. $y = (x - 1)^2 + 1$
- C. $y = (x + 1)^2 - 1$
- D. $y = 2(x + 1)^2 + 1$
- E. $y = (x - 1)^2 - 1$

10. Choose the equation that yields the given graph.



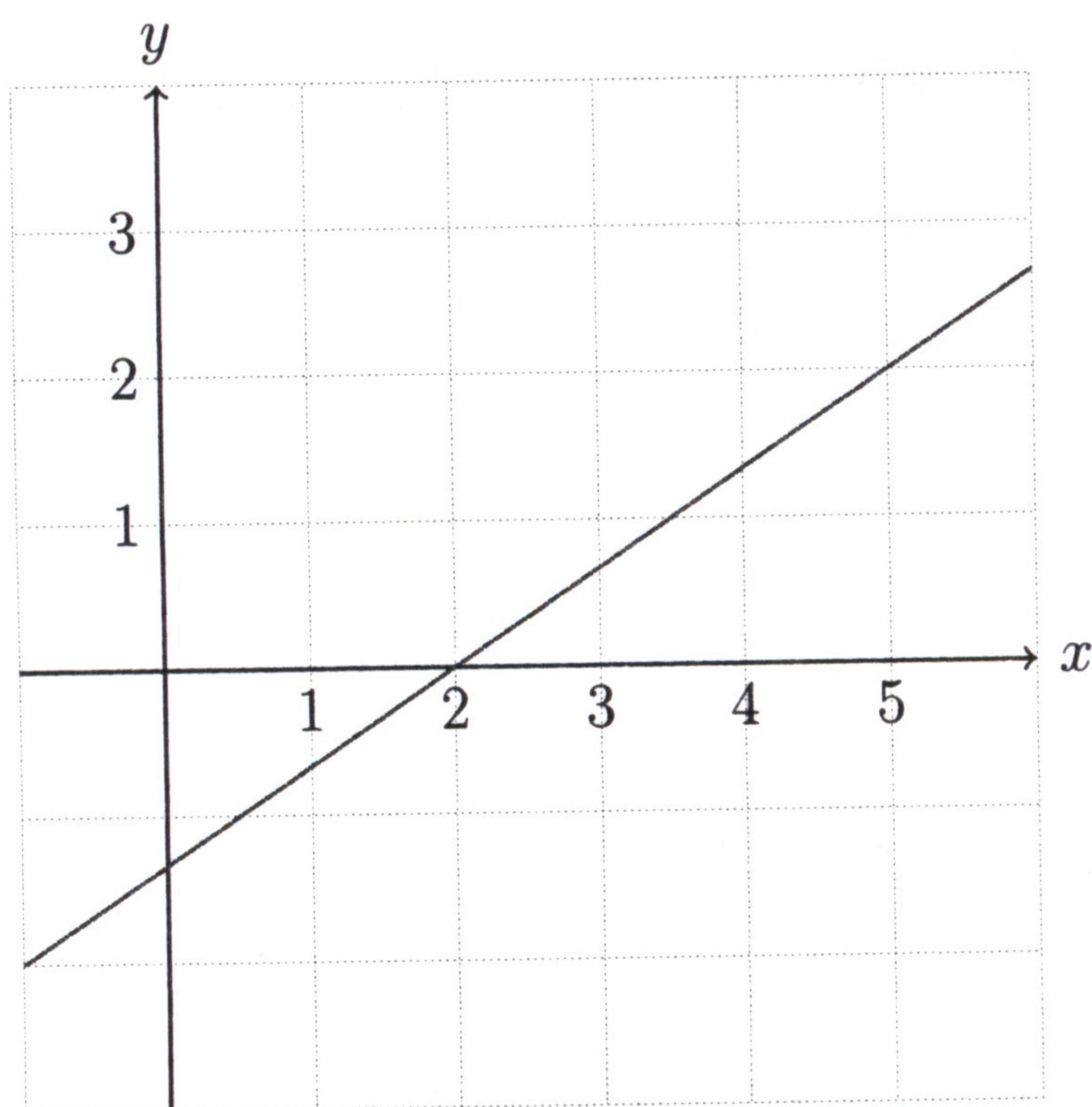
- A. $y = |x - 1| - 1$
- B. $y = 1 - |x + 1|$
- C. $y = |x + 1| - 1$
- D. $y = |x + 1| + 1$

11. Choose the equation that yields the given graph.



- A. $y = \sqrt{2}\sqrt{2-x}$
- B. $y = 2\sqrt{x+1}$
- C. $y = \sqrt{x+2}$
- D. $y = \sqrt{2}\sqrt{x+2}$
- E. $y = \sqrt{2}\sqrt{x-2}$
- F. $y = \sqrt{2-x}$

12. Choose the equation that yields the given graph.



- A. $3x + 2y = 4$
- B. $2x + 3y = 4$
- C. $2x - 3y = 4$
- D. $3x - 4y = 5$
- E. $3x - 2y = 4$

13. Based on the quadratic function $f(x) = 2x^2 + 8x + 1$ (whose graph is a parabola), the graph of the function opens

- A. up.
- B. down.

14. Based on the quadratic function $f(x) = 2x^2 + 8x + 1$ (whose graph is a parabola), what is the x -coordinate of the vertex of the parabola?
- A. 2
 - B. 1
 - C. -2
 - D. -1
 - E. 0
15. Based on the quadratic function $f(x) = -2x^2 - 12x - 20$ (whose graph is a parabola), what is the equation of the axis of symmetry for the function?
- A. $x = 1$
 - B. $x = -2$
 - C. $x = -3$
 - D. $x = -1$
 - E. $x = 3$
 - F. $x = 2$
16. Based on the quadratic function $f(x) = -2x^2 + 4x + 1$ (whose graph is a parabola), what is the y -intercept of the function?
- A. 2
 - B. 1
 - C. 0
 - D. -1
 - E. -2
17. Based on the quadratic function $f(x) = -2x^2 - 8x + 1$ (whose graph is a parabola), how many x -intercepts does the function have?
- A. 1
 - B. 3
 - C. 4
 - D. 2
 - E. none
18. Based on the quadratic function $f(x) = -2x^2 + 4x + 1$ (whose graph is a parabola), what is the domain of the function?
- A. all real numbers
 - B. $\{x \mid x \geq -1\}$
 - C. $\{x \mid x \leq -1\}$
 - D. $\{x \mid x \geq 2\}$
 - E. $\{x \mid x \leq -2\}$

19. Based on the quadratic function $f(x) = 2x^2 - 4x + 2$ (whose graph is a parabola), what is the range of the function?

A. all real numbers

B. $\{y \mid y \geq 0\}$

C. $\{y \mid y \geq -1\}$

D. $\{y \mid y \geq 2\}$

E. $\{y \mid y \geq 1\}$

F. $\{y \mid y \geq -2\}$

20. Based on the quadratic function $f(x) = -2x^2 - 12x - 20$ (whose graph is a parabola), what is the largest interval on which the function is decreasing?

A. $(2, \infty)$

B. $(-\infty, 3)$

C. $(-2, \infty)$

D. $(-\infty, \infty)$

E. $(-\infty, -3)$