Name KEY

Period: _____

2.6: Piecewise Functions

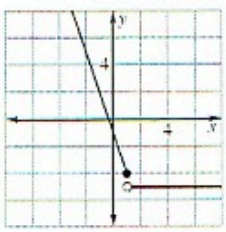
Evaluate the function for the given value of x.

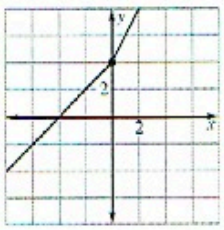
$f(x) = \begin{cases} 3, & \text{if } x \le 0 \\ 2, & \text{if } x > 0 \end{cases}$ $\quad g(x) = \begin{cases} x + 5, & \text{if } x \le 3 \\ 2x - 1, & \text{if } x > 3 \end{cases}$ $\quad h(x) = \begin{cases} \frac{1}{2}x - 4, & \text{if } x \le -2 \\ 3 - 2x, & \text{if } x > -2 \end{cases}$

1. $f(2) = 2$
2. $f(-4) = 3$
3. $f(0) = 3$
4. $f\left(\frac{1}{2}\right) = 2$
5. $g(7) = 13$
6. $g(0) = 5$
7. $g(-1) = 4$
8. $g(3) = 8$
9. $h(-4) = -6$
10. $h(-2) = -5$
11. $h(-1) = 5$
12. $h(6) = -9$

Match the piecewise function with its graph.

13. $f(x) = \begin{cases} x - 4, & \text{if } x \le 1 \\ 3x, & \text{if } x > 1 \end{cases}$ E
14. $f(x) = \begin{cases} x + 4, & \text{if } x \le 0 \\ 2x + 4, & \text{if } x > 0 \end{cases}$ B
15. $f(x) = \begin{cases} 3x - 2, & \text{if } x \le 1 \\ x + 2, & \text{if } x > 1 \end{cases}$ D
16. $f(x) = \begin{cases} 2x + 3, & \text{if } x \ge 0 \\ x + 4, & \text{if } x < 0 \end{cases}$ F
17. $f(x) = \begin{cases} 3x - 1, & \text{if } x \ge -1 \\ -5, & \text{if } x < -1 \end{cases}$ C
18. $f(x) = \begin{cases} -3x - 1, & \text{if } x \le 1 \\ -5, & \text{if } x > 1 \end{cases}$ A

A.


B.


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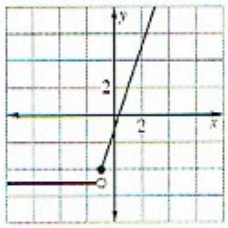
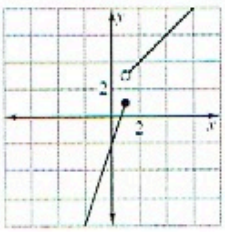
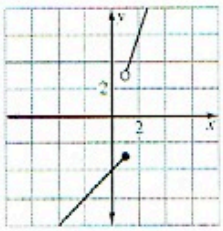
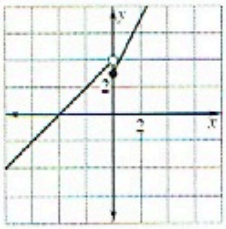


D.


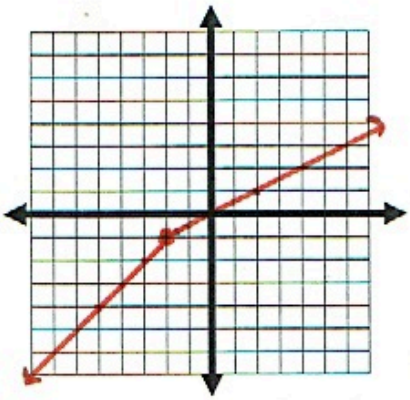
E.


F.


Graph the function.

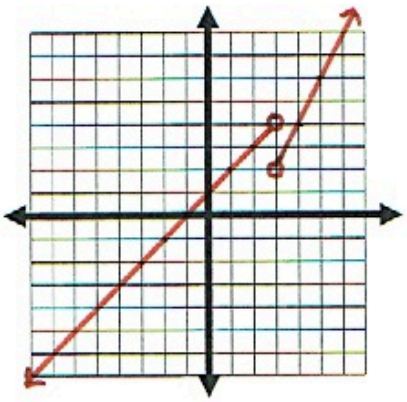
19.

$$f(x) = \begin{cases} x + 1, & x < -2 \\ \frac{1}{2}x, & x \ge -2 \end{cases}$$



20.

$$f(x) = \begin{cases} x + 1 & \text{if } x < 3 \\ 2x - 4 & \text{if } x > 3 \end{cases}$$



21.

$$f(x) = \begin{cases} x + 1 & \text{if } x < 1 \\ -x + 1 & \text{if } 1 \le x < 3 \\ x - 1 & \text{if } x \ge 3 \end{cases}$$