

Key

Piecewise Functions - Homework

Evaluate the function for the given value of x.

$$f(x) = \begin{cases} 3, & \text{if } x \leq 0 \\ 2, & \text{if } x > 0 \end{cases}$$

$$g(x) = \begin{cases} x + 5, & \text{if } x \leq 3 \\ 2x - 1, & \text{if } x > 3 \end{cases}$$

$$h(x) = \begin{cases} \frac{1}{2}x - 4, & \text{if } x \leq -2 \\ 3 - 2x, & \text{if } x > -2 \end{cases}$$

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|-----------------|------------------|-----------------|------------------------------------|
| 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. $f(x) = \begin{cases} x - 4, & \text{if } x \leq 1 \\ 3x, & \text{if } x > 1 \end{cases}$ E

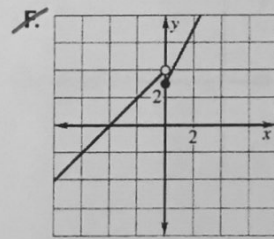
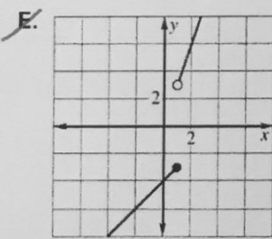
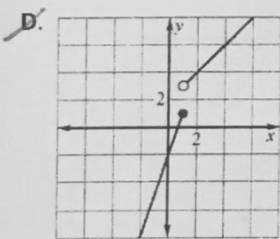
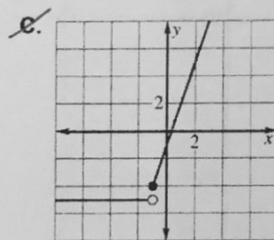
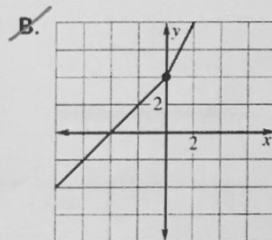
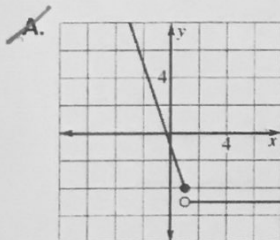
14. $f(x) = \begin{cases} x + 4, & \text{if } x \leq 0 \\ 2x + 4, & \text{if } x > 0 \end{cases}$ B

15. $f(x) = \begin{cases} 3x - 2, & \text{if } x \leq 1 \\ x + 2, & \text{if } x > 1 \end{cases}$ D

16. $f(x) = \begin{cases} 2x + 3, & \text{if } x \geq 0 \\ x + 4, & \text{if } x < 0 \end{cases}$ F

17. $f(x) = \begin{cases} 3x - 1, & \text{if } x \geq -1 \\ -5, & \text{if } x < -1 \end{cases}$ C

18. $f(x) = \begin{cases} -3x - 1, & \text{if } x \leq 1 \\ -5, & \text{if } x > 1 \end{cases}$ A



Graph the function. (on 2nd page)

19. $f(x) = \begin{cases} x + 3, & \text{if } x \leq 0 \\ 2x, & \text{if } x > 0 \end{cases}$

20. $f(x) = \begin{cases} x + 1, & \text{if } x < 0 \\ -x + 1, & \text{if } 0 \leq x \leq 2 \\ x - 1, & \text{if } x > 2 \end{cases}$

21. $f(x) = \begin{cases} 2, & \text{if } x \leq -3 \\ -1, & \text{if } -3 < x < 3 \\ 3, & \text{if } x \geq 3 \end{cases}$

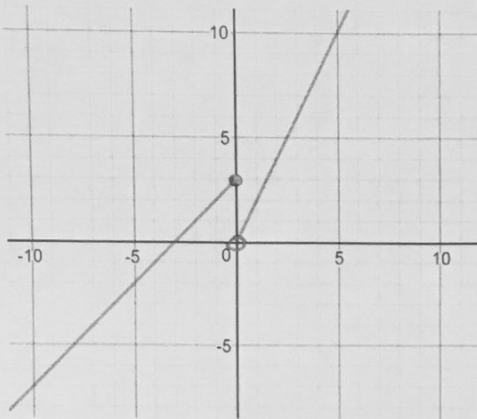
22. The admission rates at an amusement park are as follows.
 Children under 5 : free
 Children between 5 years and 11 years, inclusive: \$10.00
 Children between 12 years and 17 years, inclusive: \$25.00
 Adults: \$35.00

- a) Write a piecewise function that gives the admission price for a given age.
 b) Graph the function.

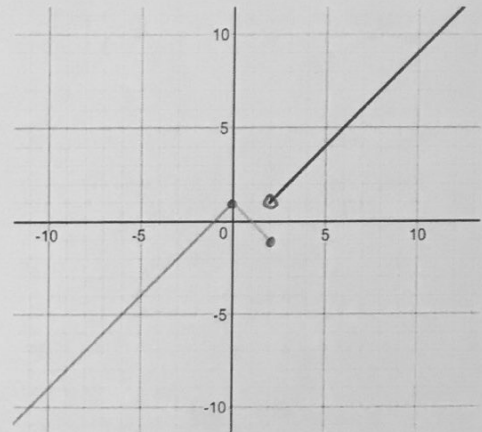
A) $f(x) = \begin{cases} \$0, & \text{if } x < 5 \\ \$10, & \text{if } 5 \leq x \leq 11 \\ \$25, & \text{if } 12 \leq x \leq 17 \\ \$35, & \text{if } x > 17 \end{cases}$

B) on 2nd page

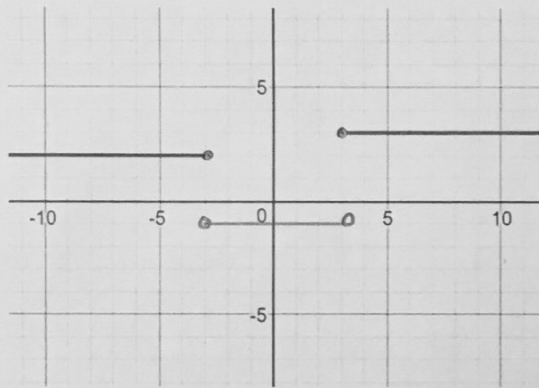
19.



20.



21.



22b.

