

Homework

5A.6 Piecewise Functions

Evaluate the function for the given value of x . (ODD ONLY)

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

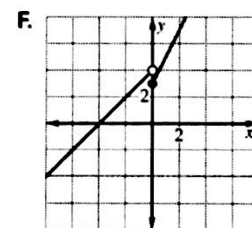
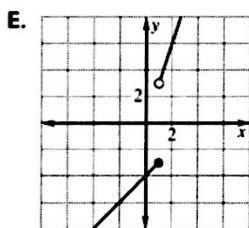
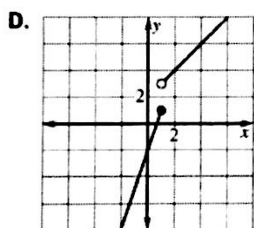
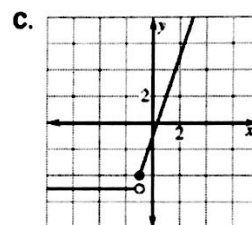
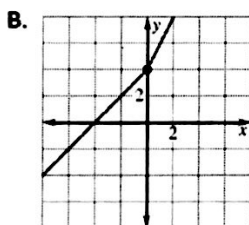
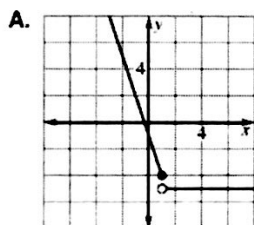
$$g(x) = \begin{cases} x + 5, & \text{if } x \leq 3 \\ 2x - 1, & \text{if } x > 3 \end{cases}$$

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

- | | | | |
|-----------------|------------------|-----------------|------------------------------------|
| 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. (ALL)

- | | | |
|--|--|--|
| 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. (CHOOSE 1 OF THESE AND #22)

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 5 years old and under: free

Children between 5 years and 12 years, inclusive: \$10.00

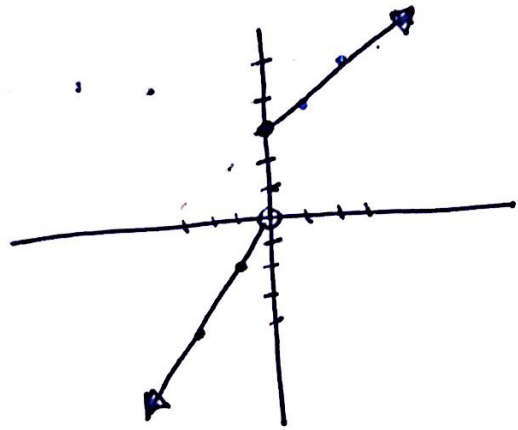
Children between 12 years and 18 years, inclusive: \$25.00

Adults: \$35.00

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

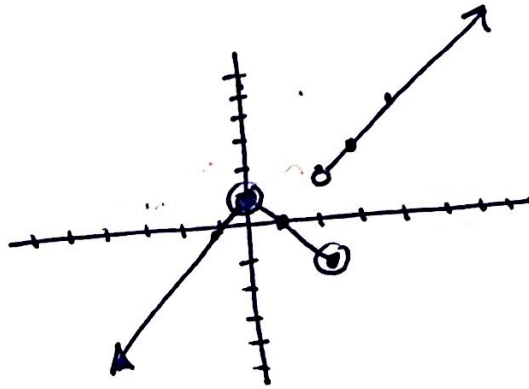
#19

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



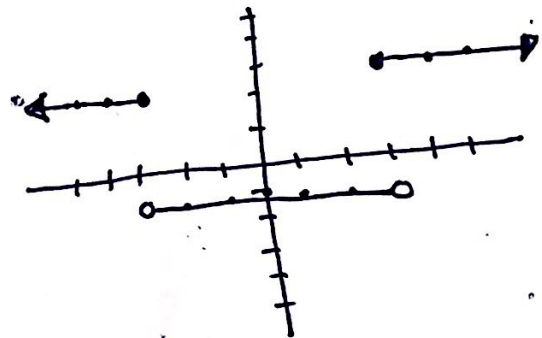
#20

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



#21

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



#22

a)

$$f(x) = \begin{cases} 0 & 0 \leq x < 5 \\ 10 & 5 \leq x < 12 \\ 25 & 12 \leq x < 18 \\ 35 & x \geq 18 \end{cases}$$

b)

