

Sec. 4.6

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. $f(2)$ <u>2</u> | 2. $f(-4)$ <u>3</u> | 3. $f(0)$ <u>3</u> | 4. $f(\frac{1}{2})$ <u>2</u> |
| 5. $g(7)$ <u>13</u> | 6. $g(0)$ <u>5</u> | 7. $g(-1)$ <u>4</u> | 8. $g(3)$ <u>8</u> |
| 9. $h(-4)$ <u>-6</u> | 10. $h(-2)$ <u>-5</u> | 11. $h(-1)$ <u>5</u> | 12. $h(6)$ <u>-9</u> |

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**

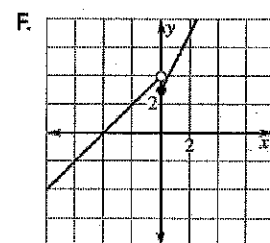
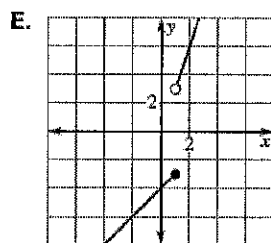
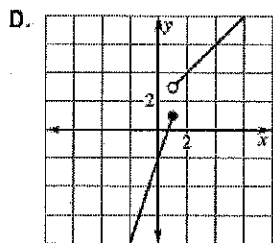
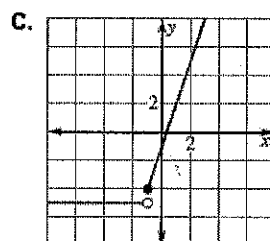
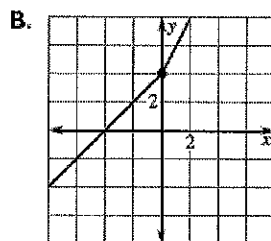
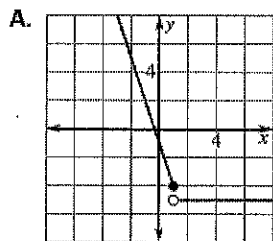
14. $f(x) = \begin{cases} x + 4, & \text{if } x \leq 0 \\ 2x + 4, & \text{if } x > 0 \end{cases}$ **B**

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**

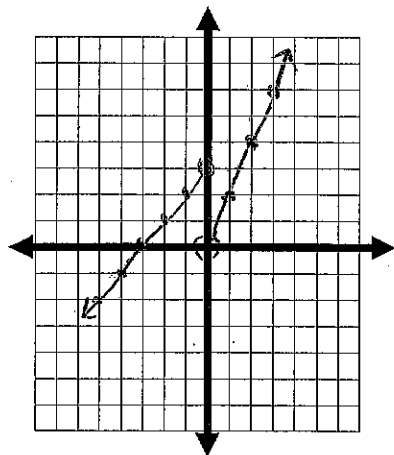
18. $f(x) = \begin{cases} -3x - 1, & \text{if } x \leq 1 \\ -5, & \text{if } x > 1 \end{cases}$ **A**



Graph the function.

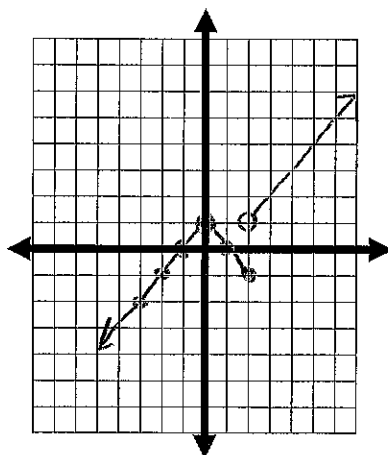
19.

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



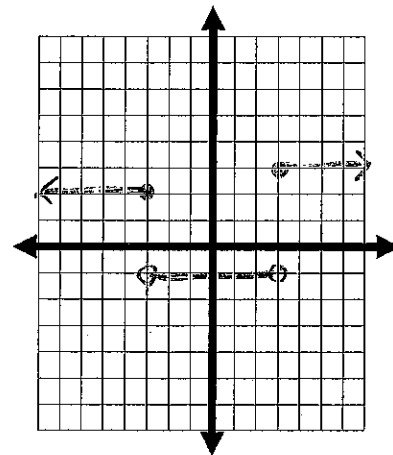
20.

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



21.

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

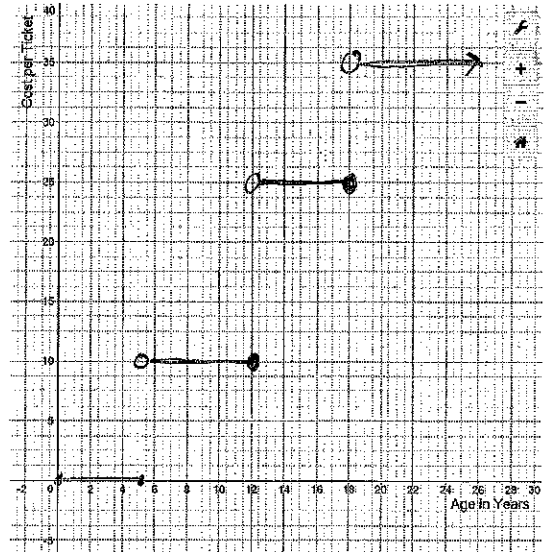


22. The admission rates at an amusement park are as follows:
 Children 5 years old and under: Free
 Children between 5 years and 12 years, inclusive: \$10.00
 Children between 12 years and 18 years, inclusive: \$25.00
 Adults: \$35.00

(a) Write a piecewise function that gives the admission price for a given age.

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

(b) Graph the piecewise function.

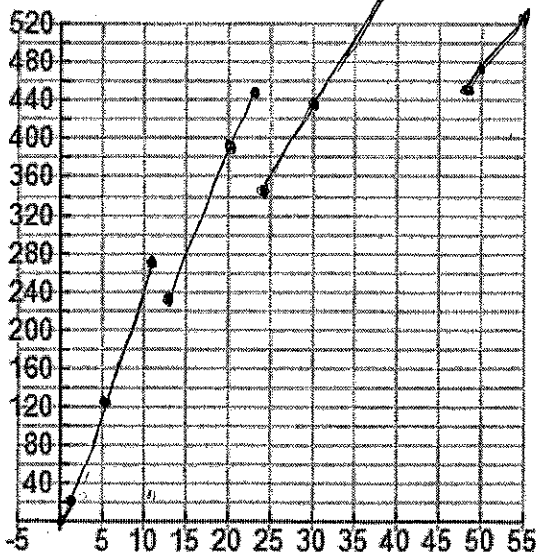


23. Graph the relationship between the quantity of bracelets sold (per tube) and the purchasing price (up to 55 tubes) on the grid below, then write the piecewise function.



22" Green Supreme Glow Necklaces (6mm)(bulk packed)

50 piece tube (\$0.49 per piece)	1-11 tubes	\$24.50
Per tube (\$0.39 per piece)	12-23 tubes	\$19.50
Per tube (\$0.29 per piece)	24-47 tubes	\$14.50
Per tube (\$0.19 per piece)	48+ tubes	\$9.50



$$y - 390 = 19.5(x - 20)$$

$$y - 390 = 19.5x - 390$$

$$f(x) = \begin{cases} 24.5x & 0 \leq x \leq 11 \\ 19.50x & 12 \leq x \leq 23 \\ 14.50x & 24 \leq x \leq 47 \\ 9.50x & x \geq 48 \end{cases}$$