

For problems 1-12, evaluate the function for the given values of x .

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

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

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

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

Graph the function.

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

14. $f(x) = \begin{cases} x-1, & \text{when } x < 2 \\ 2x+1, & \text{when } x \geq 2 \end{cases}$

Match the piecewise function with its graph.

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

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

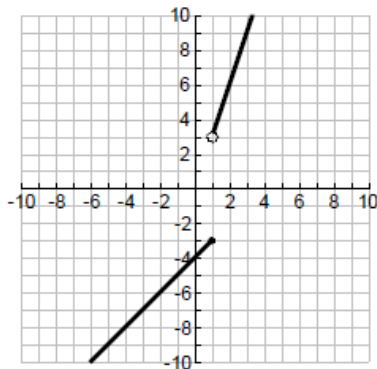
17. $f(x) = \begin{cases} 3x-2, & x \leq 1 \\ x+2, & x > 1 \end{cases}$

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

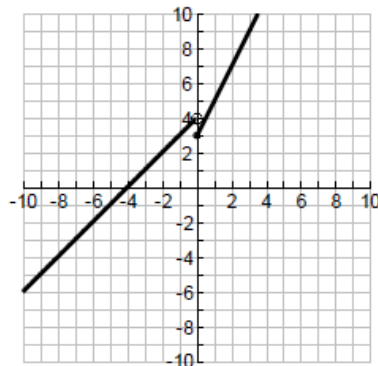
19. $f(x) = \begin{cases} 3x-1, & x \geq -1 \\ -5, & x < -1 \end{cases}$

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

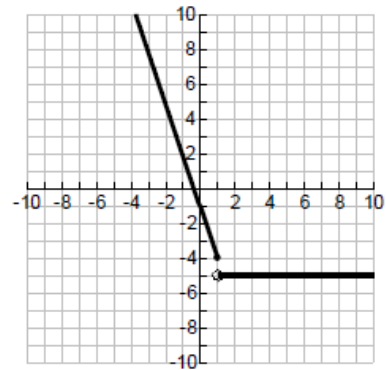
A



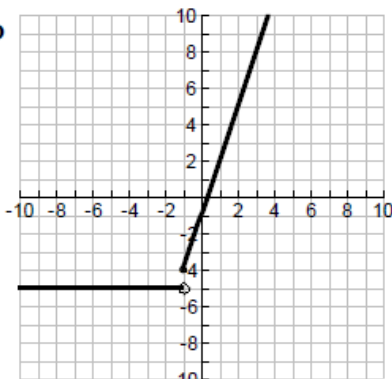
B



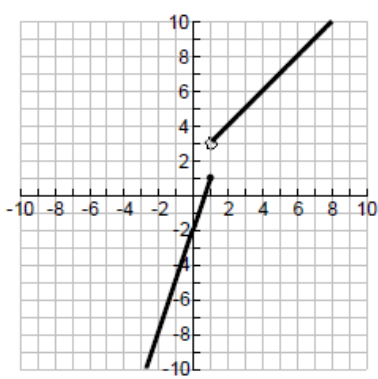
C



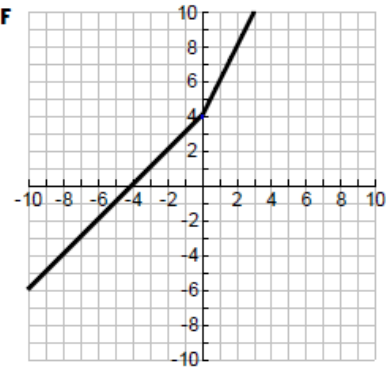
D



E

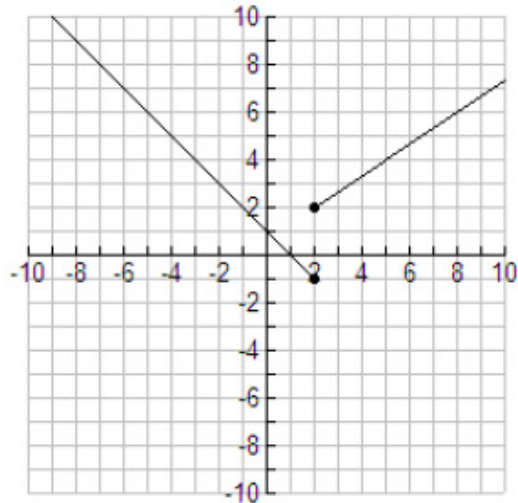


F

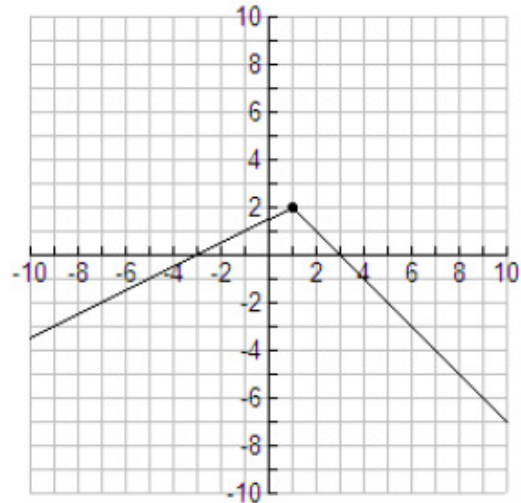


Write the function for the given graphs.

21.



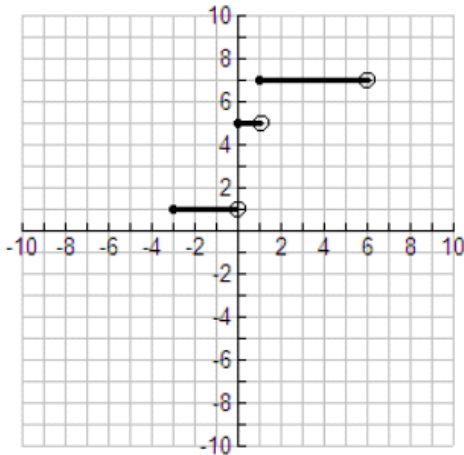
22.



23. Graph the step function.

$$f(x) = \begin{cases} 1, & \text{when } -4 \leq x < -1 \\ 3, & \text{when } -1 \leq x < 2 \end{cases}$$

24. Write the step function.



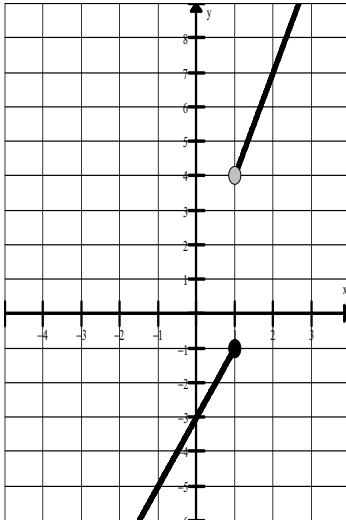
25. You have a summer job that pays time and half for overtime. That means, if you work more than 40 hours in a week, your hourly wage for the extra hours is 1.5 times your normal rate of \$7 per hour.

- Write a piecewise function describing your weekly pay, P in term of the number of hours worked, h .
- How much will you get paid if you work 47 hours?
- How much will you get paid if you work 30 hours?

2.8.3 Piecewise Function Worksheet

Odd Answers

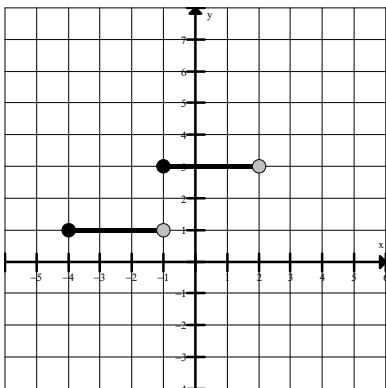
- 1. 2
- 3. 3
- 5. 13
- 7. 4
- 9. -6
- 11. 5
- 13.



- 15. A
- 17. E
- 19. D

21.
$$f(x) = \begin{cases} -x + 1, & \text{when } x \leq 2 \\ \frac{2}{3}x + \frac{2}{3}, & \text{when } x > 2 \end{cases}$$

23.



- 25. a.
$$P(h) = \begin{cases} 7h, & \text{when } 0 \leq h \leq 40 \\ 10.5h, & \text{when } h > 40 \end{cases}$$
- b. \$353.50
- c. \$210.00