

Algebra I

Name: _____

4.7 Piecewise Functions Worksheet #2

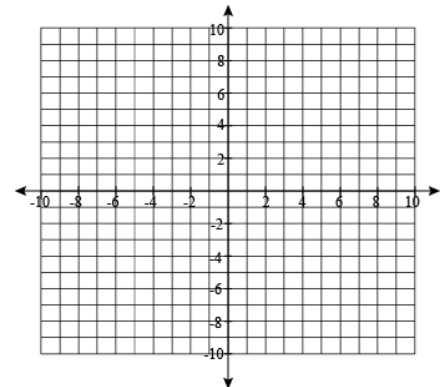
Evaluate the function for the given value of x.

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

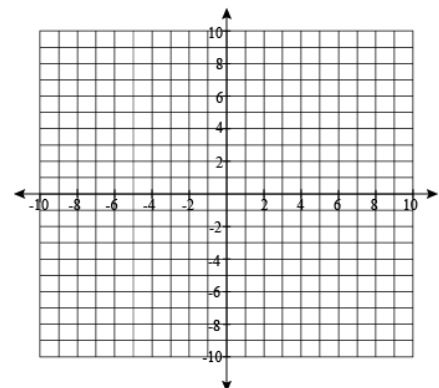
1. $f(2) =$	2. $f(-4) =$
3. $f(0) =$	4. $f\left(\frac{1}{2}\right) =$
5. $g(7) =$	6. $g(0) =$
7. $g(-1) =$	8. $g(3) =$
9. $g(-4) =$	10. $g(6) =$

Graph the function.

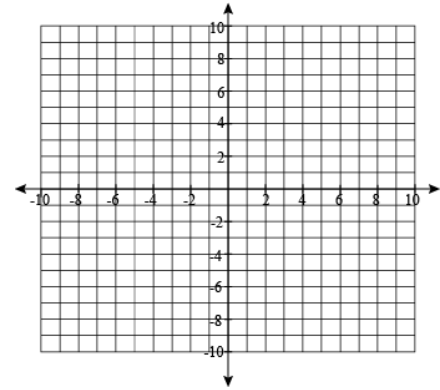
11. $f(x) = \begin{cases} -3x + 5; & x \leq 1 \\ x + 5; & x > 1 \end{cases}$



12. $f(x) = \begin{cases} -7; & x \leq -2 \\ 2x - 6; & -2 < x < 3 \\ -x - 6; & x \geq 3 \end{cases}$



$$13. f(x) = \begin{cases} -9; & -6 \leq x < -4 \\ -8; & -4 \leq x < -2 \\ -7; & -2 \leq x < 0 \\ -6; & 0 \leq x < 2 \end{cases}$$



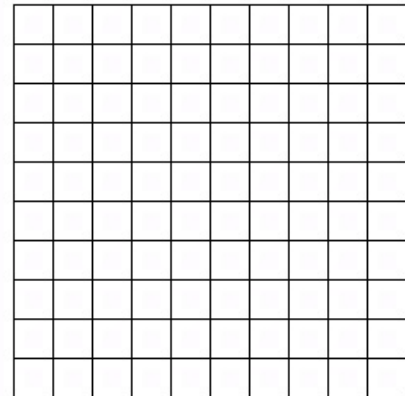
14. On a trip, the total distance (in miles) you travel in x hours is represented by the piecewise function

$$d(x) = \begin{cases} 55x, & \text{if } 0 \leq x < 1.5 \\ 82.5, & \text{if } 1.5 \leq x < 4 \\ 82.5 + 320(x - 4), & \text{if } x \geq 4 \end{cases}$$

How far did you travel in 1.5 hours? 3 hours? 4.5 hours?

15. Shelly earns \$8 an hour. She earns \$12 an hour for each hour over 40 that she works.

a) Write piecewise functions that represent the money earned by Shelly for when she works regular hours and overtime hours.



b) Sketch a graph of Shelly's earnings versus the number of hours that she works up to 60 hours.

c) How much money will Shelly earn if she works 70 hours in one week?