Piecewise Functions

Evaluate the function for the given value of x.

$f(x) = \begin{cases} 3, & \text{if } x \le 0 \\ 2, & \text{if } x > 0 \end{cases}$ $g(x) = \begin{cases} x + 5, & \text{if } x \le 3 \\ 2x - 1, & \text{if } x > 3 \end{cases}$ $h(x) = \begin{cases} \frac{1}{2}x - 4, & \text{if } x \le -2 \\ 3 - 2x, & \text{if } x > -2 \end{cases}$

1. f(2)	2. f(-4)	3. f(0)
4. f(½)	5. g(7)	6. g(0)
7. g(-1)	8. g(3)	9. h(-4)
10. h(-2)	11. h(-1)	12. h(6)
13. h(-5)	14. h(5)	15. h(-6)
16. h(8)	17. h(-8)	18. h(6)

Match the piecewise function with its graph.

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

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

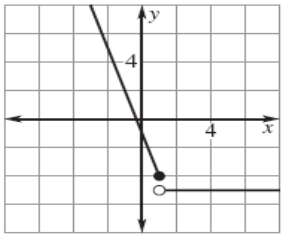
15. $f(x) = \begin{cases} 3x - 2, & \text{if } x \le 1 \\ x + 2, & \text{if } x > 1 \end{cases}$

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

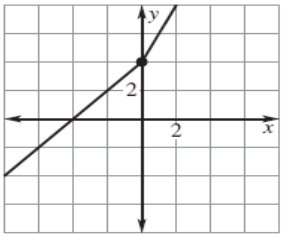
17. $f(x) = \begin{cases} 3x - 1, & \text{if } x \ge -1 \\ -5, & \text{if } x < -1 \end{cases}$

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

A.



B.



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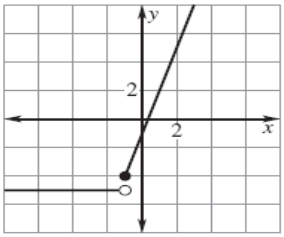
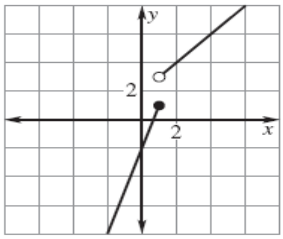
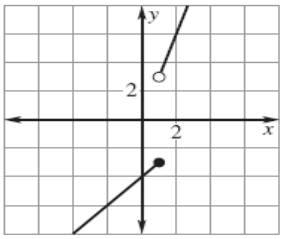


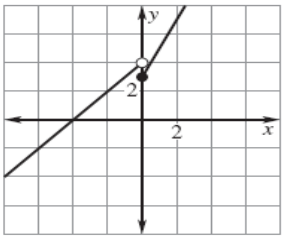
D.



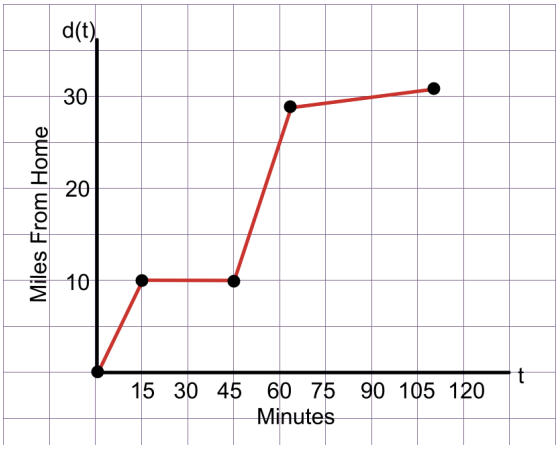
E.



F.



Colton is driving to work. He travels 10 miles in the first 15 min then stops for breakfast. He then drives for 20 minutes and goes 18 miles. His car then breaks down and he walks the last 3 miles in 45 min. Use the piecewise graph of this situation to answer the following questions.



1) About how far from home is Colton after 35 min?

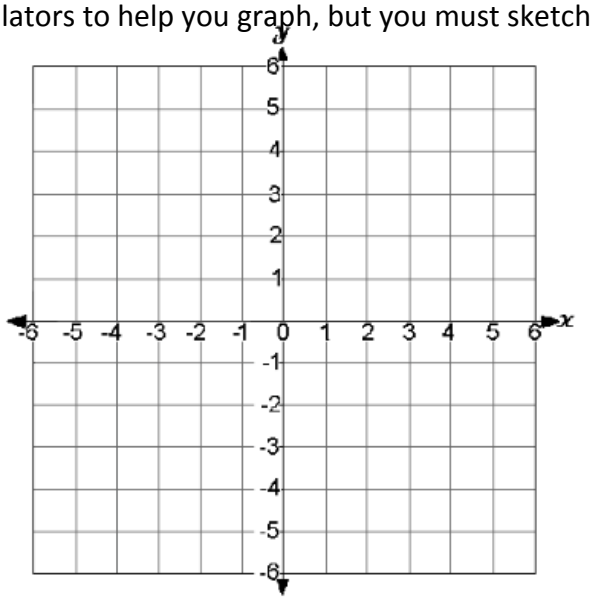
2) How many minutes has Colton been traveling after he goes 20 miles?

3) Evaluate d(90).

4) Evaluate d(10).

Carefully graph each of the following. Identify whether or not he graph is a function. Then, evaluate the graph at any specified domain value. You may use your calculators to help you graph, but you must sketch it carefully on the grid!

1) $f(x) = \begin{cases} x+5 & x < -2 \\ -2x-1 & x \geq -2 \end{cases}$



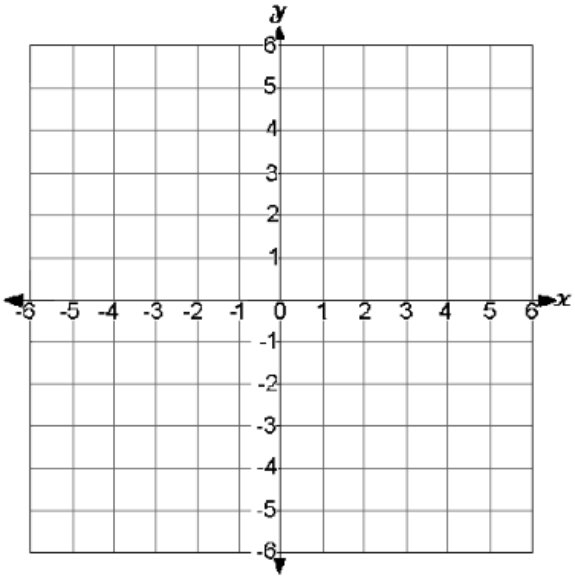
Function? Yes or No

f(3) =

f(-4) =

f(-2) =

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



Function? Yes or No

f(-2) =

f(6) =

f(1) =