1.) Given the function f defined by the formula $f(x) = 4x - 5$ find the following:

    (a) $f(3)$ (b) $f(-6)$ (c) $f(\frac{3}{4})$ (d) $f(0)$

2.) Given the function g defined by the formula $g(x) = \frac{x+7}{6}$ find the following:

    (a) $g(11)$ (b) $g(0)$ (c) $g(-37)$ (d) $g(2)$

3.) Given the function h defined by the formula $h(x) = -x^2 + 1$ find the following:

    (a) $h(6)$ (b) $h(-2)$ (c) $h(8)$ (d) $h(0)$

4.) If the function $f(x)$ is defined by $f(x) = \frac{x}{3} - 10$ then which of the following is the value of $f(12)$?

[1] 2   [2] -6

[3] -14   [4] 6

5.) If the function $f(x) = 3x - 7$ and $g(x) = \frac{5}{3}x + 1$ then which of the following is a true statement?
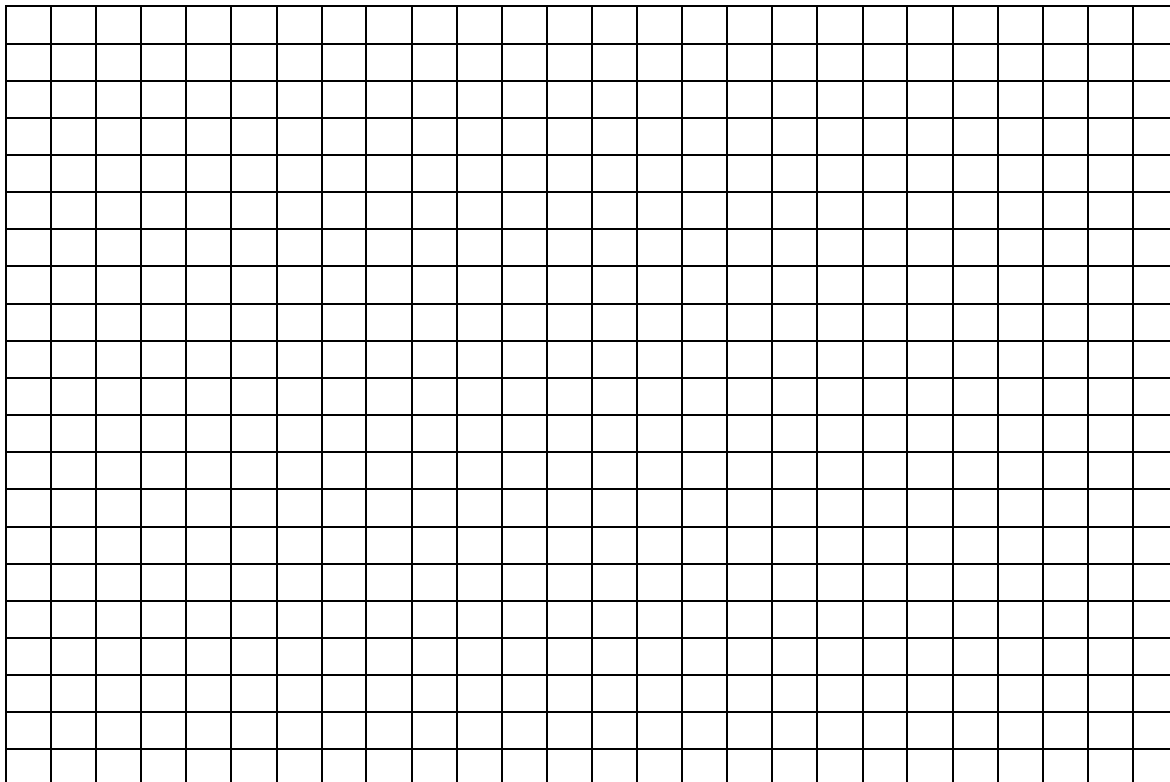
[1] $f(0) > g(0)$ [2] $f(-3) = g(9)$

[3] $f(6) = g(6)$ [4] $g(-3) < f(-3)$

6) Given the following scenario, graph a function that would map Sally's distance away from her house according to the time elapsed.   Then answer the questions that follow:

Sally is walking to school from her house. Sally's house is 21 blocks away from school. She walks at a rate of 3 blocks (y) per minute (x). Sally walks for 2 minutes before realizing she forgot her iPad. She sprints back to her house at a rate of 6 blocks per minute. She is in her house for 3 minutes before she finds the iPad and starts back on her way to school. She checks the time and figures she still has time to make it to school on time if she walks. She walks for 5 minutes before stopping to talk to a friend for 6 minutes. Realizing she may be late, she leaves her friend and sprints the remaining distance to school (at 6 blocks per minute), to make it just in time for morning prayer.
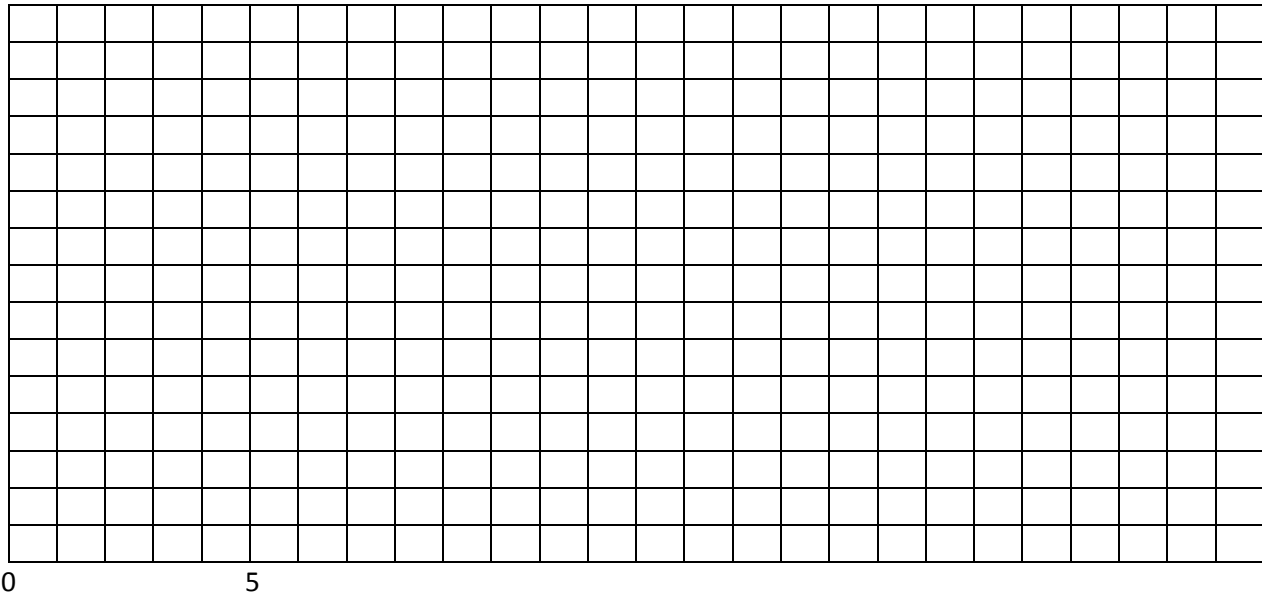
a)   How many minutes did Sally sprint for at the end of her trip?

b)   What was the total time of Sally's trip?

7) Given the following scenario, graph a function that would map Max's distance away from his house according to the time elapsed.

Max has a few items he needs to pick up from a 7-11 which is 15 blocks away. Max rides his bicycle travels as a constant rate of 3 blocks per minute when not stopped at a light. On his way there he makes no stops.. He spends 7 minutes in 7-11 and then starts to head home. He travels 9 blocks and sees his friend Joe. He stops to talk to Joe for 4 minutes before traveling home without any further stops.

0   5

(a) How long was Max's total trip?

(b) How long did it take Max to complete his trip after talking with Joe?

8) Given the following scenario, graph a function that would map Billy's distance away from his house according to the time elapsed.   Then answer the questions that follow:

Billy is walking home from his school which is 10 blocks away. He walks at a constant rate where it takes him 2 minutes to walk one block. He walks 6 blocks and stops to go into the deli and grab a soda. He's in the deli for 4 minutes and then runs the rest of the way home at a rate of two blocks per minute.
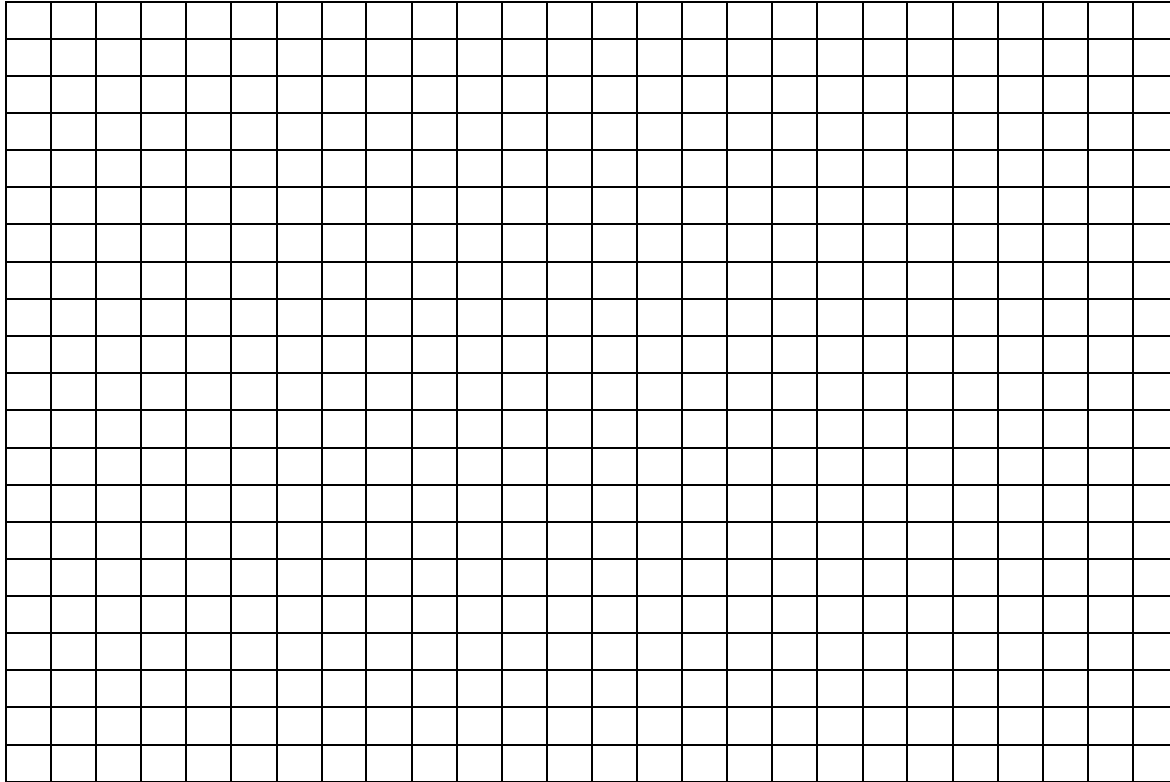
a)   *What was the total time of Billy's trip?*

b)   *How many minutes did Billy walk for before stopping at the deli?*

c)   *If Billy ran the whole trip (with no stops) home, how long would it take him to get home from school?*

9) Given the function $r(x) = \frac{x}{5} - 11$ do the following.

(a) Explain what the function rule does to convert   (b) Evaluate $r(25)$ and $r(-45)$.
the input into an output.

(c) Find the input for which $r(x) = 9$. Show the   (d) If $s(x) = 3\,r(x) + 11$ then what is $s(35)$?
work that leads to your answer   Show the work that leads to your answer.

(e) If $s(x) = 3\,r(x) + 11$ then what is $s(-15)$? Show the work that leads to your answer

10) Given the function $f(x) = 4x + 7$ do the following.

(a) Explain what the function rule does to convert the input into an output.

(b) Evaluate $f(-6)$ and $f(-10)$.

(c) Find the input for which $f(x) = -41$. Show the work that leads to your answer

(d) If $g(x) = 8f(x) - 5$ then what is $g(-12)$? Show the work that leads to your answer.

(e) If $g(x) = 8f(x) - 5$ then what is $g(8)$? Show the work that leads to your answer.

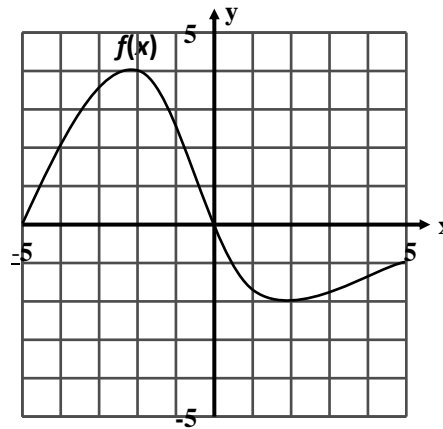**11.** Given this graph of the function f(x):Find:

a. $f(-4) =$ **b.** $f(0) =$

c. $f(2) =$ **d.** $f(-5) =$

e. x when $f(x) = -2$ **f.** x when $f(x) = 0$
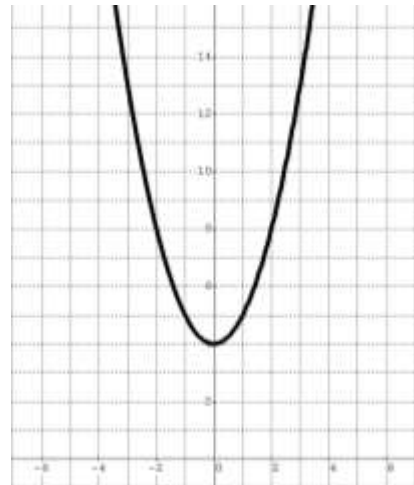
12) Given $f(x)$ graphed below, evaluate the following:

a) $f(0)$

b) $f(3)$

c) $f(-2)$

d) Why is $f(x)$ a function?

13) Given $H(x)$ graphed below, evaluate the following:

a) $H(0)$

b) $H(-3)$

c) Approximate $H(2)$

d) Why is $H(x)$ a function?