

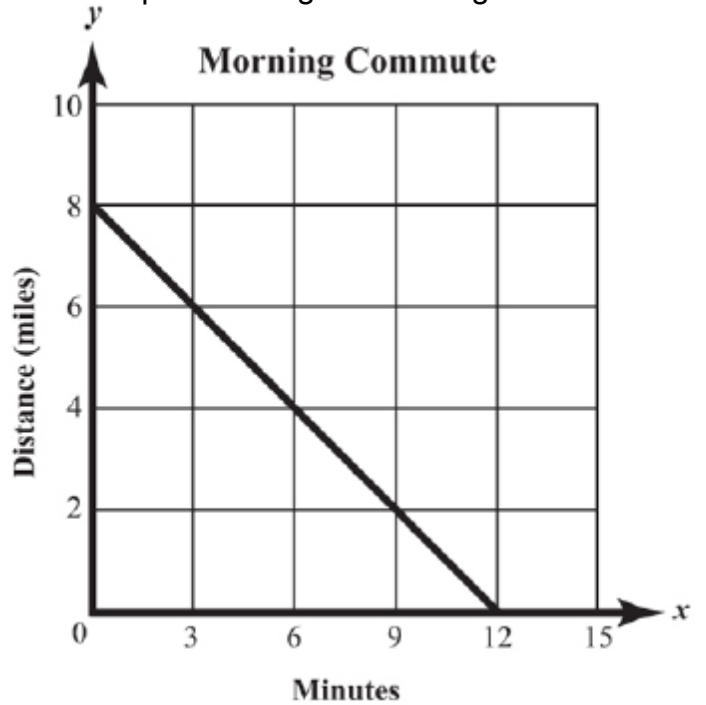
## ASSIGNMENT 23

1): The graph shows the distance between Carlos and his workplace during his morning commute.

A) How fast is Carlos walking?

B) Find the y-intercept. What does it mean?

C) How long does it take him to arrive to work?



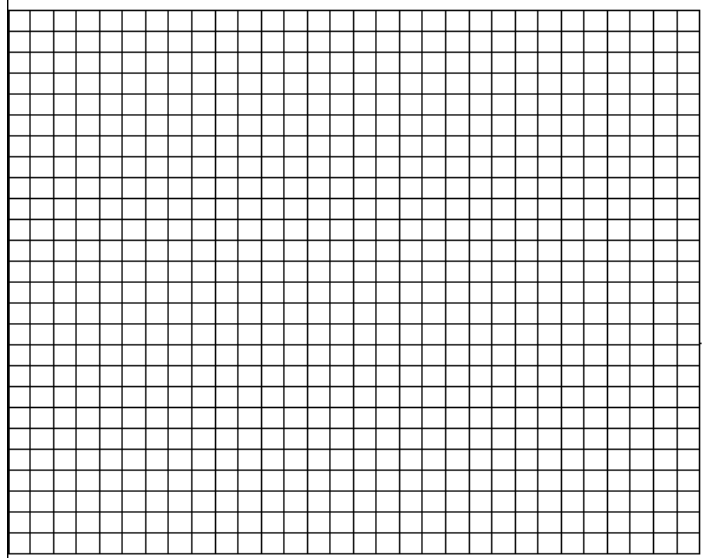
2): Jake has a swimming pool that needs to be drained at a maximum rate of 120 gallons per hour.

The table shows the function relating the volume of water in a pool and the time in hours that the pool has been draining.

A) Complete the table.

Time, $x$ (hr)	Volume, $y$ (gal)
0	800
1	680
2	
3	
4	
5	
6	
7	

GRAPH:



B) How long does it take for the pool to empty completely?

## ASSIGNMENT 23

C) Luke, Jake's friend, empties his pool also. The function that relates the time passed and the gallons remaining in Luke's pool is given by :

$$y = 900 - 140x.$$

Is Luke or Jake's pool emptying at a faster rate? How do you know?

D) How much more water does Luke have than Jake in his pool at the beginning?

E) At what point will both men have the same volume of water in their pool?

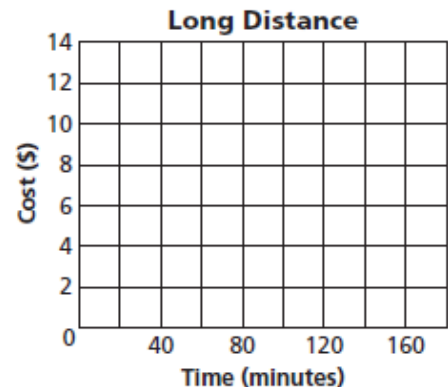
**COMMUNICATIONS** For Exercises 10–12, use the following information.

A telephone company charges \$4.95 per month for long distance calls plus \$0.05 per minute. The monthly cost  $c$  of long distance calls can be described by the equation  $c = 0.05m + 4.95$ , where  $m$  is the number of minutes.

10. Find the  $y$ -intercept of the graph of the equation.

11. Graph the equation.

12. If you talk 140 minutes, what is the monthly cost?



**MARINE BIOLOGY** For Exercises 13 and 14, use the following information.

Killer whales usually swim at a rate of 3.2–9.7 kilometers per hour, though they can travel up to 48.4 kilometers per hour. Suppose a migrating killer whale is swimming at an average rate of 4.5 kilometers per hour. The distance  $d$  the whale has traveled in  $t$  hours can be predicted by the equation  $d = 4.5t$ .

13. Graph the equation.

14. Use the graph to predict the time it takes the killer whale to travel 30 kilometers.

