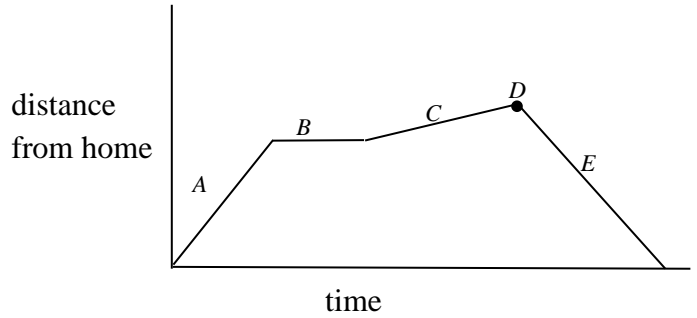**14.1**

The graph shows distance from home as a function of time for Laura's trip to the mall.
　　Write a <u>brief</u> description of her trip that explains all features of the graph.

A.

B.

C.

D.

E.

14.3
　For this situation, make a distance-time graph and a speed-time graph. Align them so the
　　　　corresponding pieces can be compared. (Assume cartoon-like changes in speed.)
Allison rode her bike at a leisurely pace until she got a flat. She stopped to fix the flat and it took
her twice as long as the amount of time she had spent riding. When she resumed riding, she rode
at her fastest speed to get to her friend's house in time to watch American Idol.
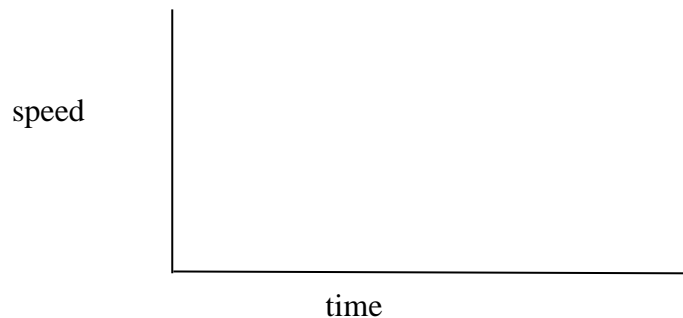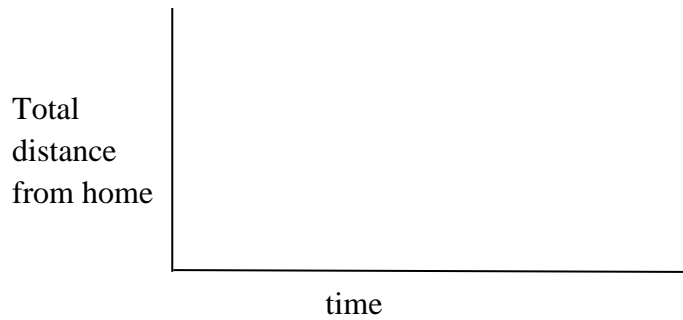
14.4

 Determine whether each statement is true or false, based on the information shown in the graph.
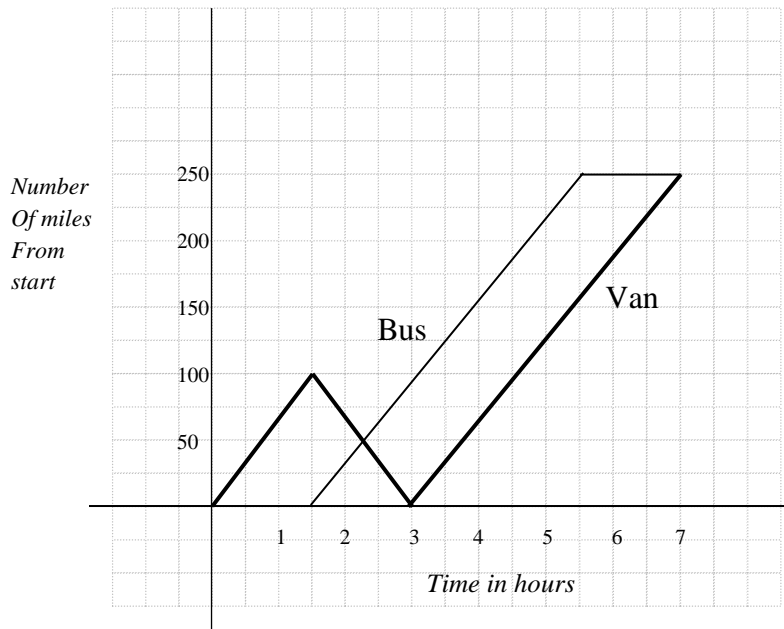
a) The bus waited two hours for the van to arrive.   **True**   **false**

b) The van turned around after 1.5 hours and went back
       to where it started.   **True**   **false**

c) The van traveled faster than the bus.   **True**   **false**

d) The bus traveled at a rate of 60 mph.   **True**   **false**

e) The van traveled a total of 450 miles.   **True**   **false**

15.1

The movie theater is filled to capacity with 200 people. When the movie is over, people will leave at a rate of 30 per minute. Describe in words the relationship between the number of people remaining in the theater and time.

Fill in the table with data to describe this relationship.

| minutes	people

Use algebraic symbols to describe this relationship. Be sure to label your variables.

What is the *y*-intercept and what does it mean about time and the theater? (0, _____)

What is the *x*-intercept and what does it mean about time and the theater?   (_____, 0)

15.2

Jeremy and Jocelyn are helping to harvest strawberries. Jeremy can harvest 7 rows/hour and Jocelyn can do 9 rows/hour. Jeremy started before Jocelyn and already has 10 rows completed when she begins. The graph for Jocelyn's number of rows harvested is already drawn. On the same set of axes, draw a graph to represent Jeremy's work.

Harvesting Strawberries

Rows harvested

Jocelyn

Number of hours worked
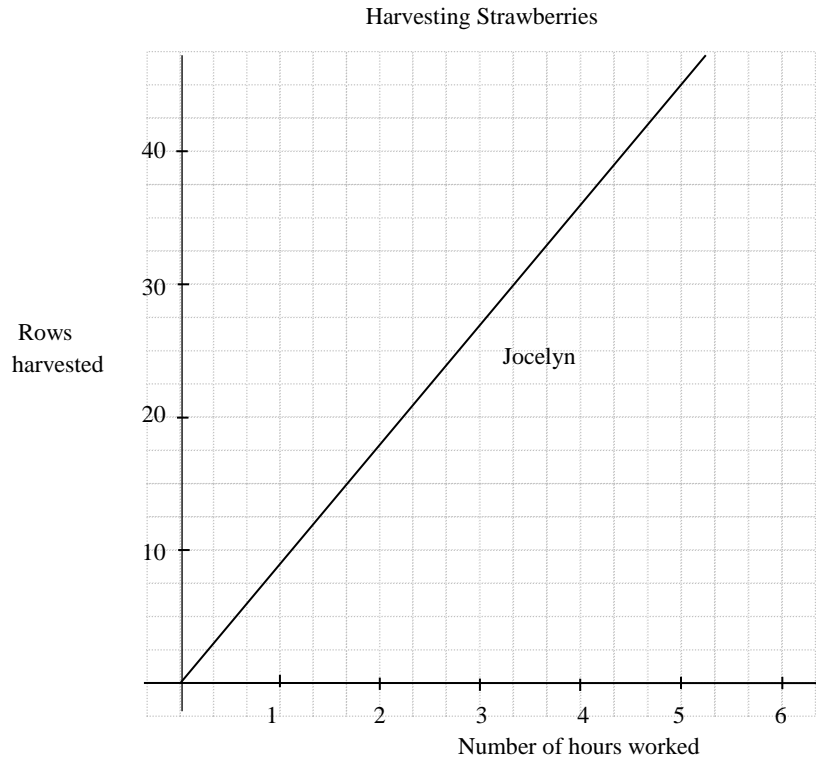
Write an equation to represent Jeremy's number of rows harvested as it relates to hours worked alongside Jocelyn. Identify your variables.

Show your work to determine the point of intersection of the two lines.

Hours: _____   Rows: _____

Explain the meaning of the point of intersection as it relates to Jeremy and Jocelyn.

15.3

Suppose Turtle runs at 60 ft/s. Rabbit runs at 90 ft/s, but gives Turtle a 2-second head start.
How many seconds will <u>Turtle</u> have run when Rabbit catches up with him? Show your work.

Answer: _____

Circle the method you used to solve:

table   graph   algebra equations   quantitative reasoning

15.4

Kaitlyn attended Ivy Tech and completed 20 credit hours with a GPA of 3.1. She has been
attending Purdue long enough to complete 15 credit hours with a GPA of 2.4. What is her
overall GPA? Show and label all steps of your work. Do not round.

Overall GPA: _____

15.5

Suppose $g(x) = 5x + 2$ and $h(x)$ is defined by the process of adding 3 to the input and then
doubling that sum. Give the output if 2 is the input to:

a) first $h(x)$, then $g(x)$

Answer: _____

b) first $g(x)$, then $h(x)$

Answer: _____

15.6

Use the order of operations to evaluate:

$$4 - 15 \div 3 + 2^5 - (8-9)^2 + 17$$

$$\left(3^2\right)^3 - 7 \cdot (5-1)^2 + 3\frac{2}{3} \cdot 4\frac{1}{2}$$

27.1

For the experiment of tossing a pair of dice, determine which of the following could be considered outcomes. For those, circle the word "outcome." Otherwise, circle the word "event."

      a) Getting a sum of ten   OUTCOME   EVENT

      b) Getting doubles   OUTCOME   EVENT

      c) Getting two 3s   OUTCOME   EVENT

      d) Getting a sum of twelve   OUTCOME   EVENT

27.2

On Elm Street, there are 27 houses of which 8 do <u>not</u> have a garage. Morgan lives on Elm Street. Determine the odds in favor of Morgan living in a house that <u>has</u> a garage.

      A. $8:19$
      B. $19:27$
      C. $8:27$
      D. $27:35$
      E. $19:8$