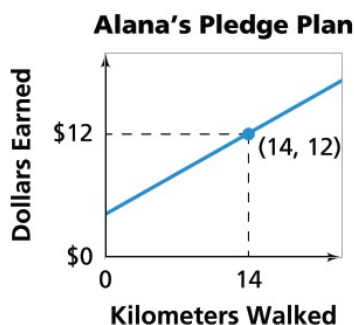


## 2.4 Connecting Tables, Graphs, and Equations



Look again at Alana's pledge plan from Problem 1.3. Suppose  $A$  represents the amount raised in dollars and  $d$  represents the distance walked in kilometers. You can express this plan with the equation  $A = 5 + 0.5d$ .



- Explain why the point  $(14, 12)$  is on the graph of Alana's pledge plan.
- Write a question you could answer by locating this point.
- How can you use the equation for Alana's pledge plan to check the answer to the question you made up?
- How can you use a graph to find the number of kilometers that Alana walks if a sponsor donates \$17? How could you use an equation to answer this question?

In this Problem, you will investigate similar questions relating to pledge plans for a walkathon.



### Problem 2.4

Consider the following pledge plans. In each equation,  $y$  is the amount pledged in dollars by each sponsor, and  $x$  is the distance walked in kilometers.

**Plan 1**  
 $y = 5x - 3$

**Plan 2**  
 $y = -x + 6$

**Plan 3**  
 $y = 2$

**Problem 2.4** *continued*

- A** For each pledge plan:
1. What information does the equation give about the pledge plan? Does the plan make sense?
  2. Make a table of values of  $x$  from  $-5$  to  $5$ .
  3. Sketch a graph of the relationship. What part of each graph is relevant to the situation?
  4. Do the  $y$ -values increase, decrease, or stay the same as the  $x$ -values increase? Explain how you can find the answer using a table, a graph, or an equation.
- B**
1. Which graph from Question A, part (3) contains the point  $(2, 4)$ ?
  2. How do the coordinates  $(2, 4)$  relate to the equation of the line? To the corresponding table of data?
  3. Write a question you could answer by locating this point.
- C**
1. Which relationship has a graph you can use to find the value of  $x$  that makes  $8 = 5x - 3$  a true statement?
  2. How does finding the value of  $x$  in  $8 = 5x - 3$  help you find the coordinates for a point on the graph of the relationship?
- D** The following three points all lie on the graph of the same plan:
- $(-7, 13)$        $(1.2, \blacksquare)$        $(\blacksquare, -4)$
1. Two of the points have a missing coordinate. Find the missing coordinate. Explain how you found it.
  2. Write a question you could answer by finding the missing coordinate.
- E**
1. Describe how a point on a graph is related to a table and an equation that represent the same relationship.
  2. How can you use a table, a graph, or an equation that represents the relationship  $y = 5x - 3$  to
    - a. find the value of  $y$  when  $x = 7$ ?
    - b. find the value of  $x$  when  $y = 23$ ?

**A C E** Homework starts on page 38.