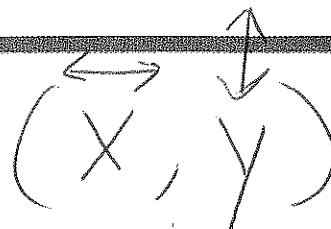


4-1

Using Graphs to Relate Two Quantities



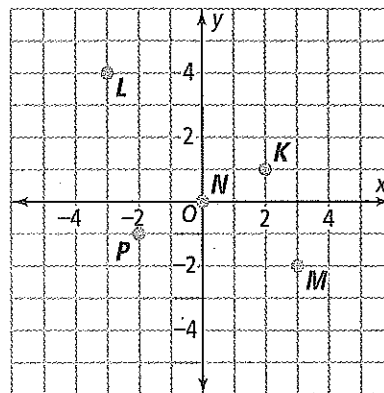
Vocabulary



Review

Use the *graph* at the right. Draw a line from each point in Column A to its coordinates in Column B.

Column A	Column B
1. point K	(-3, 4)
2. point L	(-2, -1)
3. point M	(0, 0)
4. point N	(2, 1)
5. point P	(3, -2)



Vocabulary Builder



analyze

(verb) AN uh lyz

Other Word Forms: analyzed (verb), analysis (noun)

Definition: to examine carefully in detail; to identify the nature and relationship of its parts

What It Means: break down, dissect

Word Origin: from the Greek word *analysis*, meaning "a dissolving"

Use Your Vocabulary

Complete each statement with the appropriate word from the list.

analyze analysis analyzed
 present past past

6. The chemist ? the data to draw a conclusion.

analyzed

7. Jean needed to ? the data she gathered in her experiment.

Analyze

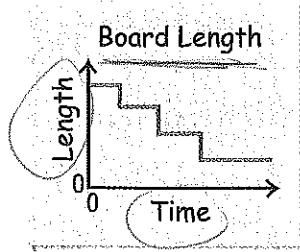
8. An ? of the traffic at an intersection showed the need for a traffic light.

analysis



Problem 1 Analyzing a Graph

Got It? What are the variables in the graph? Describe how the variables are related at various points on the graph.



9. Circle the two variables being related in the graph.

time cut board length

10. Show how the variables are related by underlining the correct word or words to complete each sentence.

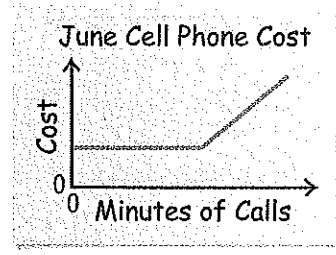
The length of the board decreases with time.

The length of the board is decreasing while you are actually cutting the board.

During the time shown on the graph, there are three cuts.

There is a piece of the board left at the end of the time shown.

Got It? What are the variables in the graph? Describe how the variables are related at various points on the graph.



11. Show how the variables are related by underlining the correct word to complete each sentence.

The cost of the cell phone in June increases with number of minutes of calls.

The cost of the cell phone in June is constant for the first part of the month.

12. Use your answers from Exercise 11 to describe how the variables in the graph are related.

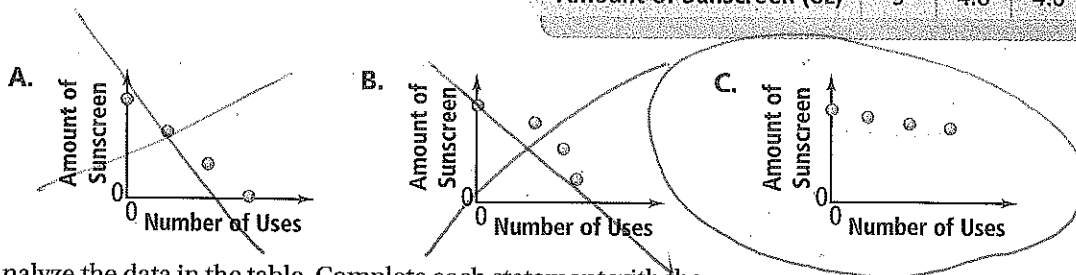
The first part of the month is constant, but once all the minutes are used, the cost will increase towards the end of the month.



Problem 2 Matching a Table and a Graph

Got It? The table shows the amount of sunscreen left in a can based on the number of times the sunscreen has been used. Which graph could represent the data shown in the table?

Sunscreen				
Number of Uses	0	1	2	3
Amount of Sunscreen (oz)	5	4.8	4.6	4.4



13. Analyze the data in the table. Complete each statement with the correct choice from the list. Use each word only once.

slowly fall decreases

The amount of sunscreen in the container ? after each use.

decreases

The amount of sunscreen in the container changes ?.

slowly

The graph should ? at a slow rate.

fall

14. The graph that could represent the data shown in the table is Graph

Problem 3 Sketching a Graph

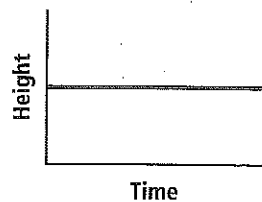
Got It? Suppose you start to swing yourself on a playground swing. You move back and forth and swing higher in the air. Then you slowly swing to a stop. What sketch of a graph could represent how your height from the ground might change over time? Label each section.

15. Multiple Choice The two variables being related are time and ?.

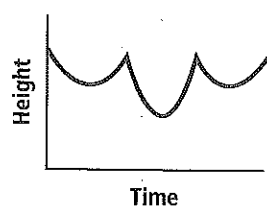
- (A) length of swing (B) distance from top of swing (C) your height from ground (D) your height

16. Consider the three cycles during the middle of your time on the swing. Circle the best sketch of your height from the ground during that time.

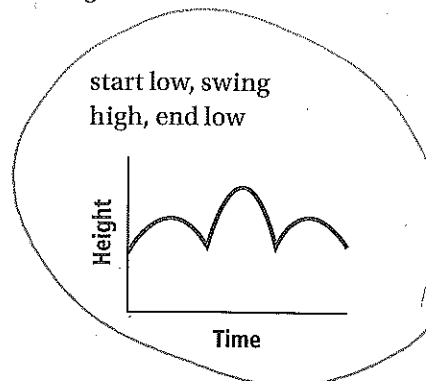
constant distance from ground



start high, swing low, end high



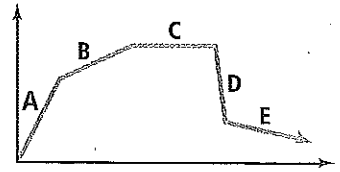
start low, swing high, end low





Lesson Check • Do you UNDERSTAND?

Reasoning Describe a real-world relationship that could be represented by the graph sketched at the right.



17. Draw a line from the name of each segment in Column A to its verbal description in Column B.

Column A

Column B

- | | | |
|---|--|------------------------------------|
| A | | spilling water from a cup |
| B | | pouring water into a cup quickly |
| C | | stop pouring water into a cup |
| D | | water leaking from a hole in a cup |
| E | | pouring water into a cup slowly |

18. Use the verbal descriptions above to help you write a situation that could be represented by the sketch.



Math Success

Check off the vocabulary words that you understand.

- variable quantities increase decrease

Rate how well you can *use graphs*.

