Relating Graphs to Life Situations

Directions: Pick the best graph that represents the situation described by the given information.

1. A driver stopped her car for a traffic light. After waiting for the light to turn green, then the driver continued on her way.

2. A train pulls into a station, lets off its passengers.

3. A person parachutes from an airplane, free-falls for a while, opens her chute, slows down, and lands on the ground.

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4. A child climbs up a slide and then slides down.

5. A girl takes a ride on a Ferris wheel.

6. A child is on a swing.
Graphs With Scales

7. Sandra starts out with $43 and feeds quarters into a slot machine. Which graph shows the amount of money left after \( x \) tries, assuming that she never wins?

\[ a) \]
\[ b) \]
\[ c) \]

\[ d) \]
\[ e) \]

8. Richard types for three minutes at the rate of thirty-five words per minute. He takes a two-minute break and then types for three more minutes at the rate of twenty words per minute. The graphs below show time on the horizontal axis and the number of words typed on the vertical axis. Which graph represents Richard's time at the typewriter?

\[ a) \]
\[ b) \]
\[ c) \]
\[ d) \]

9. Choose one of the answers that was not correct in problem 1 and compose a problem having that answer as its corresponding graph.

From the Mathematics Teacher, September 1994
Drawing Graphs

10. Sara walks from her home to the store. Halfway to the store, she realizes that she forgot to bring money, so she turns around, returns home, gets her money, and then walks all the way to the store. Graph time on the horizontal axis and distance from home on the vertical axis.

11. Rashid is jumping on a trampoline. Graph time on the horizontal axis and his distance off the ground on the vertical axis.

12. Carlos lives in a large city and travels to school on a local bus that stops at every block to let passengers on and off.
   a. Graph time on the horizontal axis and the speed of the bus on the vertical axis.
   b. Graph time on the horizontal axis and the distance Carlos has traveled on the vertical axis.
Writing Stories from Graphs

George and his family were watching a movie and eating popcorn. Each family member had a bowl with the same amount of popcorn. The graphs below all show the amount of popcorn remaining in the person’s bowl over a period of time. Under each graph, write a few sentences describing what may have happened.

George

<table>
<thead>
<tr>
<th>Amount Of Popcorn</th>
<th>Time</th>
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George Sister

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<tr>
<th>Amount Of Popcorn</th>
<th>Time</th>
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George’s Dad

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George’s Mom

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From: Mathematics Teacher September 1999
Think of a real-life situation that could be represented by the graph on the right. Write a story about the situation, and be prepared to read your story to the class. Be sure to label the axes of the graph.

Think of a real-life situation that could be represented by the graph on the right. Write a story about it, and be prepared to read the story to your classmates. Be sure to label the axes of the graph.

Answers:

Relating Graphs to Life Situations
12 a. 12b.

From the Mathematics Teacher, April 1999
Match It or Distance Match
By: Gloria Schreiber

Information:

Graphs of real-world data cannot always be described with one simple equation. Often the graph is made up of separate pieces, which together describe a problem or event. If you move back and forth in front of a motion detector, your motion would be described in defined pieces are call piecewise-defined functions.

In this activity, you will match your motion to a given graph by moving back and forth in front of a motion detector. This will strengthen your knowledge of positive and negative slopes of a line.

YOU NEED:
1 CBR Unit or a CBL and motion detector
1 TI - 83
1 Yard Stick
Masking Tape

STEPS:
1. Go to applications and pick CBL/CBR

2. Press Ranger
3. Press Application, Distance Match, and then Feet

4. Next follow directions

TRY TO MATCH THE GRAPH ON THE NEXT SCREEN

STUDY THE GRAPH THEN PRESS [ENTER] TO START

![Graph]
Teacher Notes:

1. This activity works well when students use the TI-83 or TI-84 screen and an overhead projector so that they can easily see the graph that they are trying to match and adjust their motion accordingly. It will also work in small groups if one member of the group holds the calculator so that the walker can see the graph as she walks.

2. Students must walk toward the motions detector for a negative slope. Walk away for a positive slope and stand still for zero slope.

3. For an alternate, students like to turn off the overhead and try to match without looking at the graph.