| Stud | ent: | Class: | lss:Date | | |
|------------------------|--|--------------------------|-------------|--|--|
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| | | Gas Tank During the Trip | | | |
| | 20 | | | | |
| ik contents in gallons | 18 | | | | |
| | 16 | | | | |
| | 14 | | | | |
| | 12 | | | | |
| | 10 | | | | |
| | 8 | | | | |
| | 6 | | | | |
| | 4 | | | | |
| Tar | 2 | | | | |

120

Number of miles traveled

140

160

180

200

220

240

Use this graph of the gallons of gas in the tank of the Wilson's car to answer the following questions.

100

1. How many phases do you see in Marcus's graph?

60

80

20

20

-2

-4

40

- 2. What does the behavior of the graph tell you about the gasoline consumption in each phase of the trip?
- 3. What do the "breaks" in the graph tell you?
- 4. How does the amount of gas in the tank vary during the first 100 miles of the Wilson's trip?

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5. Does the amount of gas in the tank change at different rates during the various phases of the graph, or does it always vary at the same rate? How do you know?



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6. **REINFORCE** In the year 1900, the population of Glenwood, Missouri was approximately 3000 people. Over the next 40 years, the population grew by 500 people each decade. In 1940, a large manufacturing company opened in Glenwood. The population grew by 2000 people between 1940 and 1950. During the 1950s, the population stayed constant. But since 1960, the population has steadily decreased. By the year 2000, only 4000 people lived in Glenwood.

Using the grid provided, sketch the population of Glenwood from 1900 to 2000.



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7. **REINFORCE** Describe a situation that may be modeled by the graph of the piecewise function that models distance over time.



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8. **REINFORCE** Julia hiked a mountain with her brother, Trent. The trail to the top of the mountain is 6 miles long and is quite steep. When they reached the top of the mountain, they stopped for 2 hours to rest and eat lunch. Their speed on the way up was slower than their speed on the way down.

Trent drew the following graph to represent the total distance he and Julia traveled over time.



Julia doesn't agree that the graph Trent drew is accurate. Why doesn't Trent's graph represent their hiking trip?

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9. **REINFORCE** Sketch a graph of distance over time that represents Julia and Trent's hiking trip. Be sure to label the axes of your graph.

10. **REINFORCE** Vera makes the following graph using a motion detector.



Based on the graph, describe the path that Vera took.

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- 11. **REINFORCE** Using Vera's graph, answer the following questions.
 - a. How far was Vera from the detector after 3 seconds?
 - b. At 4 seconds, was Vera moving towards the motion detector or away from it?
 - c. Over what time interval was Vera moving the fastest?