

Performance Assessment Task

Which Roller Coaster is For Me?

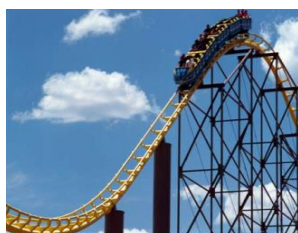
The fastest roller coaster in the world is the Formula Rossa ride, at Abu Dhabi's Formula One theme park. The ride launches thrill seekers to a top speed of 149 miles per hour.

You are planning a trip to an amusement park. As part of your trip, you intend to ride a roller coaster. In this task, you will choose a park to visit, based on your preference for roller coasters.

The steepest sections of three different roller coasters from three different parks are shown below.



Park A



Park B

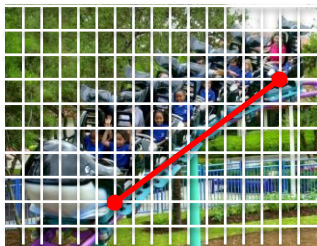


Park C

To make your decision, you will need to:

- Determine the slope of each of these sections.
- Explain how the slope of these sections affects the speed of the roller coaster in those sections.
- Explain which park's roller coaster you would like to ride, and why.

Use the line segments plotted on the grids below to help you complete the task.



Park A

Park B

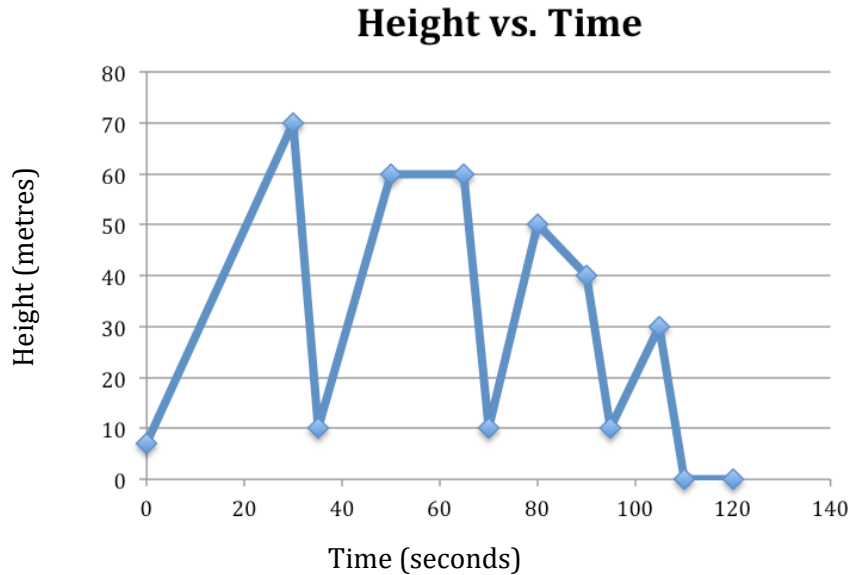


Park C



Which Roller Coaster is For Me? (Continued)

While conducting further research, you discover that some amusement parks provide height-time graphs of their roller coaster rides. The graph below represents the height vs. time of a roller coaster at a different amusement park.



- Describe the experience of riding this roller coaster. Write a description of what a rider experiences on this roller coaster in each segment. Explain how the slope of each section affects the experience of the rider.



Rubric: Which Roller Coaster is For Me?

Student _____ Date _____

Criteria	Description of Criteria	Yes	Not Yet	Teacher Comment
Determine slope (Algebra 2) [C, CN, PS, V]	The student has correctly calculated the slopes of the given roller coasters.			

Level Criteria	Excellent	Proficient	Adequate	Limited *	Insufficient/ Blank *
Explain the implication of slope on the roller coaster's speed (Algebra 2) [C, CN, PS, V]	Explains the effect of slope on the speed in an astute manner.	Explains the effect of slope on the speed in a credible manner.	Explains the effect of slope on the speed in a simplistic manner.	Explains the effect of slope on the speed in an inaccurate manner.	No score is awarded because there is insufficient evidence of student performance based on the requirements of the assessment task.
Justify choice of roller coaster (Algebra 2) [C, CN, PS, V]	Justifies choice in a compelling manner.	Justifies choice in an interesting manner.	Justifies choice in a predictable manner.	Justifies choice in an ineffective manner.	
Describe a graphical representation in terms of slope (Algebra 2) [C, CN, PS, V]	Provides an explicit explanation of what the rider experiences in each segment.	Provides a logical explanation of what the rider experiences in each segment.	Provides a simplistic explanation of what the rider experiences in each segment.	Provides a flawed explanation of what the rider experiences in each segment.	

* When work is judged to be limited or insufficient, the teacher makes decisions about appropriate intervention to help the student improve.