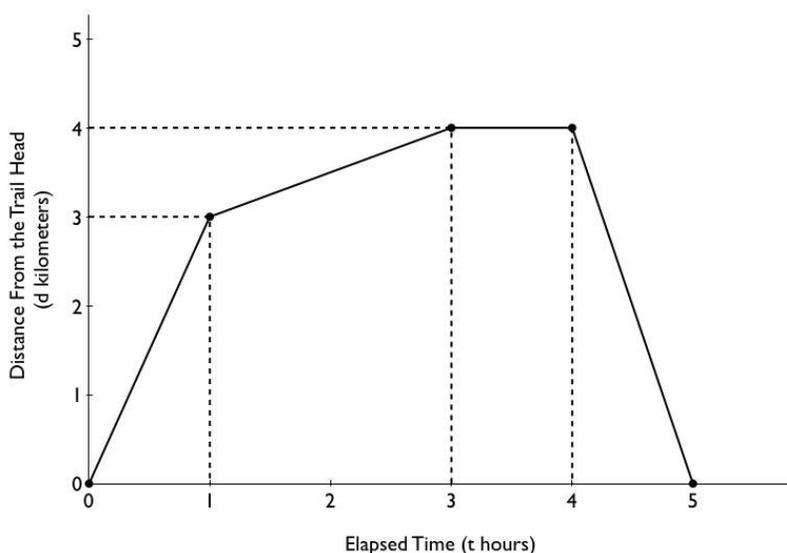# Performance Assessment Task

Rocky Road

You are a tourist planning a trip to the Canadian Rockies. A trail guidebook provides various graphical and textual aides to help visitors understand the demands of each trail.

The above graph, taken from the guidebook, represents a typical hiker's progress on Wapiti Trail.

For this activity, you will:

1. **Interpret the Graph**
   Describe the progress of a hiker based on the graph above. Explain the meaning of the graph's slopes. Provide specific information about each stage of the hike by calculating the speed, and a hypothesis about what factors might have caused each change in the hiker's speed.

2. **Find the Slope and Equation of One Line Segment (Extended)**
   Using the second stage of the journey above (between hours 1 and 3), determine the following, and interpret each in the context of the hiker. Show your calculations.
   - the slope of the line
   - an equation for d (distance in km) in terms of t (elapsed time in hours).

Rocky Road (Continued)

3.   Create a New Scenario

Imagine yourself hiking on a different trail. You come across two or more unexpected events that affect your progress. Because of these influences, your progress will be significantly different than a typical hiker's. Describe the unexpected events and explain how they affect your progress with respect to speed and time. Construct a new graph, similar to the one on the previous page, which represents your imagined hike.

Rubric: Rocky Road

Student _____ Date _____

Level / Criteria	Excellent	Proficient	Adequate	Limited *	Insufficient/ Blank *
Describe a possible situation for a given graph (Relations and Functions 1) [C, CN, R, V]	Provides an **explicit** explanation of the graph using **precise** mathematical language.	Provides a **logical** explanation of the graph using **relevant** mathematical language.	Provides a **simplistic** explanation of the graph using **appropriate** mathematical language.	Provides a **flawed** explanation of the graph using **incorrect** mathematical language.	No score is awarded because there is insufficient evidence of student performance based on the requirements of the assessment task.
Explain, using examples, slope as rate of change (Relations and Functions 3) [PS, R, V]	Provides an **accurate** explanation of the slope and how it relates to the hiker's speed.	Provides a **credible** explanation of the slope and how it relates to the hiker's speed.	Provides a **simplistic** explanation of the slope and how it relates to the hiker's speed.	Provides a **flawed** explanation of the slope and how it relates to the hiker's speed.	
Determine the equation of a linear relation (Relations and Functions 5 and 7) [PS, R]	Uses the graph to determine the **correct** equation of the line, with supporting work shown.	Uses the graph to determine a **substantially correct** equation of the line, with supporting work shown.	Uses the graph to determine a **partially correct** equation of the line, with supporting work shown.	**Unable** to use the graph to determine the equation of the line.	
Sketch a possible graph for a given situation (Relations and Functions 1) [C, CN, R, V]	Sketches a graph that demonstrates an **explicit** connection to their story.	Sketches a graph that demonstrates a **credible** connection to their story.	Sketches a graph that demonstrates a **plausible** connection to their story.	Sketches a graph that **demonstrates little or no** connection to their story.	

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