Keeping It Real Assessment Introduction

Keeping It Real Assessments have been designed to be as close to real life as possible to show the relationships between math and everyday life. They allow you to apply your learning of course content in unique ways. You can ask your teacher for clarification or to verify your thought processes. Ultimately, however, the work should be your own.

This course has four *Keeping It Real Assessments*, from which you **must choose two**.

>   **Unit A – Budgeting for Fun**
>   **Unit B – Mathtracker**
>   **Unit C – Burger Shack**
>   **Unit D – Dream Room**

You will be assessed on each concept, rather than on each individual question. Work related to each concept will be graded on a scale from 0 to 4, according to the criteria listed below. In addition, a maximum of **2 marks** will be awarded for the use of **proper units** throughout the entire assessment.

Concept Criteria	
0	No score is awarded because there is insufficient evidence of student performance based on the requirements of the task.
1	First step only was completed, or correct formula was written, but not used correctly, or a diagram was drawn, but no further work was appropriate, or an incorrect method/process was used.
2	Half of a solution is present, with a correct initial method/process, or major algebraic mistakes were made, or the incorrect information was used, or information was transferred incorrectly, or one part was correct, but another part was incorrect.
3	Most of the solution is correct, with the entire method/process being correct, but a calculation error, an algebraic error, or a calculator error was made.
4	Correct answers obtained with correct methods/processes.

Keeping It Real Assessment
Unit B
Mathtracker

Background

You and a friend have been chosen to be the "prey" of the famous reality television show, Mathtracker. The goal of the show is to make it, on foot, to a designated finish line before being caught.

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The Course

You have been given a map of the local terrain, and two paths to choose from. Before starting, you must choose the 'best' path for your team. There are many things to consider when choosing the 'best' path. The distance, the time it will take you to run, and how much you will be 'hidden' must all factor into your decision.

Path 1:

- Head straight to the river (trail x).
- Use the given zip line to cross the river.
- Go straight along the river until you see the trail to the finish line (trail y).
- Head straight for the finish line (trail z).

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Note: The dashed lines represent the route you will take with Path 1.

Path 2:

- Stay hidden in the bush on the north side of the river (trail *q*).
- Head southeast to the river (trail *r*).
- Use the given zip line to cross the river near the finish line.
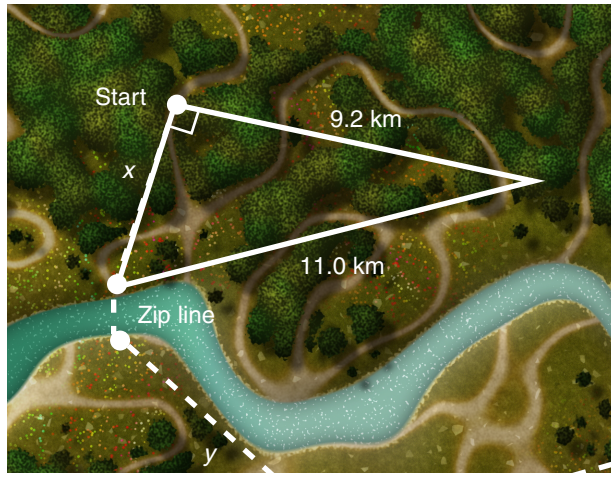- Head straight for the finish line (trail *s*).

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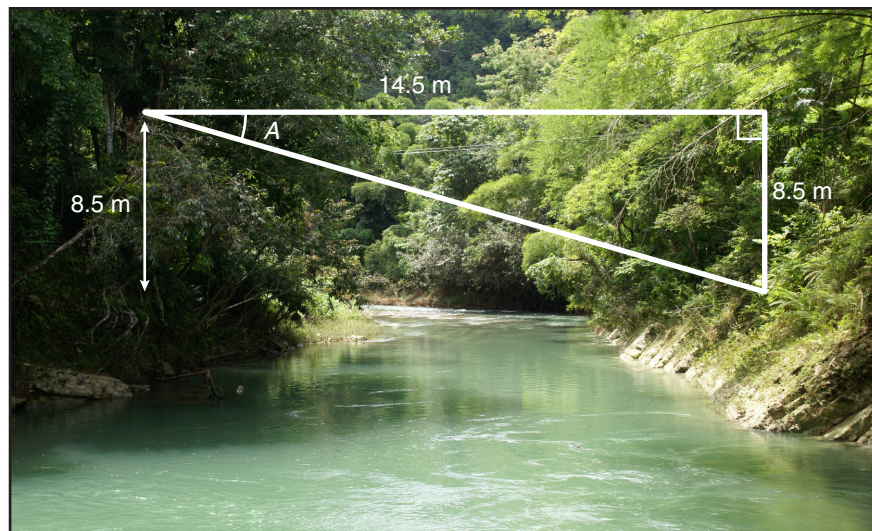Note: The dashed lines represent the route you will take with Path 2.
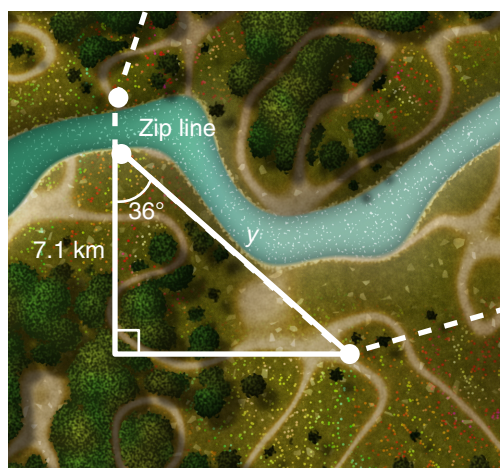
1.   Calculate the length of Path 1.

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a.   Given the information on the map above, find the distance from the starting point to the river. Round your answer to one decimal place.

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b. A zip line is used to cross the river. You know the river is 14.5 m wide, and the zip line being used begins 8.5 m above the ground. What is the angle, relative to the horizontal, at which you will be gliding down the zip line? Round your answer to the nearest whole number.

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c.   Calculate the length of trail *y* that follows the river. Round your answer to one decimal place.
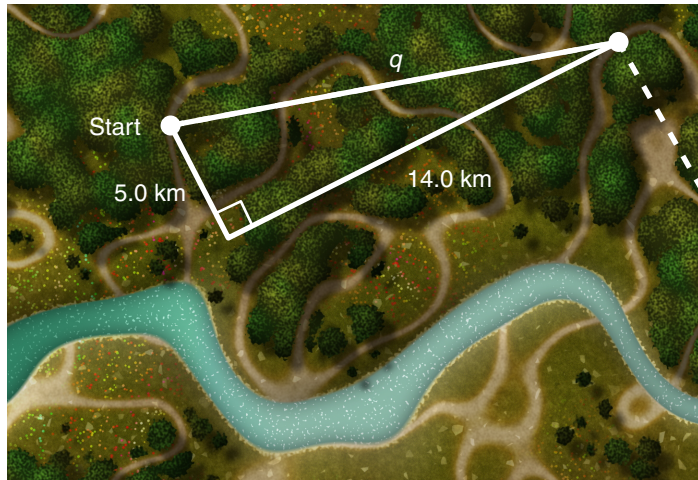
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d.   The finish line is close. Find the length of trail *z*. Round your answer to one decimal place.

2.   Calculate the length of Path 2.

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a.   From the start, you head east through dense bush to stay hidden. Find the length of trail q, given the information on the map above. Round your answer to one decimal place.

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b. You now need to head for the river. Given the information on the map above, how far is it to the river? Round your answer to one decimal place.

12.4 m

B

8.2 m

8.2 m
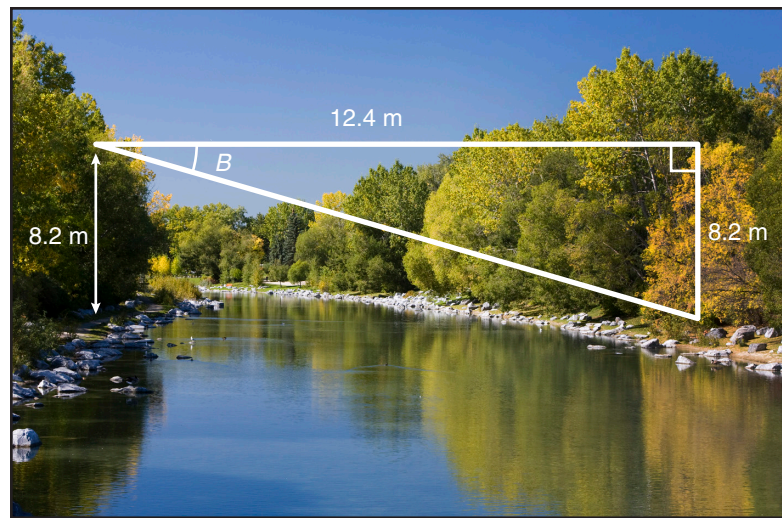
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c. A zip line is used to cross the river. You know the river is 12.4 m wide, and the zip line being used begins 8.2 m above the ground. What is the angle, relative to the horizontal, at which you will be gliding down the zip line? Round your answer to the nearest whole number.

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d.   The finish line is near. Calculate the length of trail *s*. Round your answer to one decimal place.

3. Calculate the total length of each path.

    a. How long is Path 1? Fill in the blanks below.

        Trail x = _____ km

        Width of River = 0.0145 km

        Trail y = _____ km

        Trail z = _____ km

    b. Calculate the total length of Path 1. Round your answer to one decimal place.

    c. How long is Path 2? Fill in the blanks below.

        Trail q = _____ km

        Trail r = _____ km

        Width of River = 0.0124 km

        Trail s = _____ km

    d. Calculate the total length of Path 2. Round your answer to one decimal place.

4.   Compare the two Paths.

You realize distance is not the only thing to consider when choosing a 'best' path. Go back and look at the two paths again, and fill in the table with the advantages and disadvantages of each path.

	Path 1	Path 2
Total Length of Path		
Advantages		
Disadvantages		

Make a choice. Which path will you choose for you and your partner? Give two reasons for your decision.

Grading Scheme for Keeping It Real Assessments

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Keeping It Real B

Concept	0-4 rating	comments
Solving for length using the Pythagorean Theorem		
Calculating lengths using Trigonometry – Sine		
Calculating lengths using Trigonometry – Tangent		
Calculating lengths using Trigonometry – Cosine		
Determining angle measures using Trigonometric Ratios		
Calculating the total length of each path		
Comparing Paths		
Use of Proper Units	/2	
Total Marks	/30	