

For Scorer Use Only: If this task has been administered using a modification that affects how it is scored, the teacher administering the task should describe which parts of the rubric will not be used below:



SCORE:	
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Certificate of Initial Mastery Task Booklet
2007–08 School Year

At the Beach

Mathematics
On-Demand Task 2.2.08

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Central Falls
Coventry
Johnston

Lincoln
Middletown
Pawtucket

West Warwick

Mathematics

At the Beach

On-Demand Task 2.2.08

2007–2008

Student Identification

Please PRINT your formal name and the additional information requested in the spaces below.

First Name																	
Last Name																	

Year of graduation				
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School															
Teacher															

	Month		Day		Year	
Today's Date			/			/

Section 1. Task Conditions

To complete this task, the student:

- May use mathematical tools including calculators, textbooks, formula sheets, and notes.
- Must work alone.
- Must have one 90-minute class period or two 45-minute “on-task” periods to complete this task. Students are allowed about 10 additional minutes to complete their work if needed.
- Should read through the problem and the task criteria of the prompt to determine what is being asked of them before they attempt to answer any part. They may reread as needed. Make sure they understand to answer each question of the task.
- Should supply supporting evidence in each part of the task.
- Should use the π -key rather than the 3.14 rational approximation.
- Should round final answers according to each prompt, that is, use irrational values until the final step of the calculation process.
- Should thoroughly support calculator work (scientific or graphics) through written commentary or representations of their key strokes.

If students use additional paper, it should be stapled to the booklet. Only use the **booklet name and number** to identify the additional pages.

These directions should be followed unless a student requires accommodations in the way he/she takes this task. These accommodations should be related to student’s IEP, 504 Plan, PLP, or entering/beginning status as an English Language Learner. Before the student begins this task, you should discuss which of the accommodations in the box below the student requires.

In order to meet standard on this task, students cannot score a zero or a one on any section of the rubric.

Accommodations to Meet Special Needs

To the teacher: Describe any accommodations required by the student’s IEP, 504 Plan, PLP, or in relation to his/her entering/beginning status as an English Language Learner that you made in the way this task was administered:

Presentation/format: _____

Timing/scheduling: _____

Mode of response: _____

Environment/setting: _____

Scoring Modifications

Students with individual learning needs may require a **modification(s) in the way this task is scored**. (For example, a student with dyslexia might not be scored on the spelling component of the rubric.) These individual learning needs should be described in the student’s IEP, 504 Plan, PLP, or in relation to the student’s entering/beginning status on the ACCESS Test for English Language Learners. If the way this task is scored should be modified, be sure to describe this modification in the box on the cover of the task.

Section 2. Task Criteria

This list of criteria describes what you need to do in order to Meet Standard on this task. You should pay attention to the Meets Standard column and be sure you understand what it says before you begin this task. In order to Meet Standard on this task, you cannot get a zero or a one on any expectation in this task.

Your teacher should discuss these criteria with the class. Use the right-hand column to take notes, write down hints to yourself, things that seem important to you, or things that you do not want to forget.

Expectations	Meets Standard 3	Student Notes
<p>The student uses geometric properties or theorems to solve problems involving angles or right triangle ratios. Demonstrates conceptual understanding by sketching diagrams. Question 1 DOK 2</p>	<p>Student calculates the distance from Danielle to the rock and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) 10-2, 10-10</p>	
<p>The student solves problems involving angles and lengths by applying the trigonometric formulas and demonstrates conceptual understanding by sketching diagrams. Question 2 DOK 2</p>	<p>Student calculates the distance from Danielle to the island and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) 12-6, 10-10</p>	
<p>The student solves problems involving distance; uses geometric properties to solve problems involving angles, lines, or right triangle ratios; and justifies solution(s) using mathematics and sketching diagrams. Question 3 DOK 3</p>	<p>Student determines the solution and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) 10-2, 10-10, 12-6</p>	
<p>The student solves problems involving distance; uses geometric properties to solve problems involving angles, lines, or right triangle ratios; and justifies solution(s) using mathematics and sketching diagrams. Question 4 DOK 3</p>	<p>Student determines the solution and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) 10-2, 10-10, 12-6</p>	

Section 3. Task Prompt

Josh and Danielle are at the beach. They notice a rock and an island offshore.

1. Josh and Danielle stand 30 meters from each other on the straight waterline at the beach. They both see a rock in the distance. Danielle's line of sight is 90° with the waterline and Josh's estimated line of sight is 73° . Sketch a labeled diagram of the situation and find the distance between Danielle and the rock. **Show all work. Round the solution to the nearest hundredth and indicate units.**

2. Josh looks out beyond the rock and in a straight line with the rock sees an island farther out to sea. Without moving, Danielle estimates the angle formed by her line of sight to the island is 92° . Sketch a labeled diagram of this new situation and determine the distance between Danielle and the island. **Show all work. Round the solution to the nearest hundredth and indicate units.**

3. Danielle is not capable of swimming more than 100 meters before resting. Is there a way for Danielle to swim to the island? Sketch a labeled diagram and provide all calculations to show whether there is or is not a way for her to swim to the island from her current location. **Show all work. Round each length to the nearest hundredth and indicate units.**

4. Josh is also incapable of swimming more than 100 meters before resting. He knows from his present location that he cannot make it to the island, but, if he walks along the beach, he can. What is the shortest distance that he can walk along the shoreline so that he can swim to the island? Sketch a labeled diagram of this situation and mathematically justify your answer. **Show all work. Round each length to the nearest hundredth and indicate units.**

Section 4. TASK RUBRIC: At the Beach

Scorer 1: Instructions to Scorer: Use a magic marker to highlight the portion of each row in the rubric that matches the student’s performance. Highlight the column at the bottom that summarizes the overall performance.

Expectations	Exceeds standard 4	Meets standard 3	Nearly meets standard 2	Below standard 1	0
The student uses geometric properties or theorems to solve problems involving angles or right triangle ratios. Demonstrates conceptual understanding by sketching diagrams. Question 1 DOK 2	Student correctly calculates the distance from Danielle to the rock, sketches a detailed drawing, and uses appropriate units. All supporting work is shown in detail.	Student calculates the distance from Danielle to the rock and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) 10–2, 10-10	Student calculates the distance from Danielle to the rock and sketches a drawing. Work contains an intrusive error or work is incomplete.	Student makes an attempt. Work contains intrusive errors.	
The student solves problems involving angles and lengths by applying the trigonometric formulas and demonstrates conceptual understanding by sketching diagrams. Question 2 DOK 2	Student correctly calculates the distance from Danielle to the island, sketches a detailed drawing, and uses appropriate units. All supporting work is shown in detail.	Student calculates the distance from Danielle to the island and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) 12–6, 10-10	Student calculates the distance from Danielle to the island and sketches a drawing. Work contains an intrusive error or work is incomplete.	Student makes an attempt. Work contains intrusive errors.	
The student solves problems involving distance; uses geometric properties to solve problems involving angles, lines, or right triangle ratios; and justifies solution(s) using mathematics and sketching diagrams. Question 3 DOK 3	Student correctly determines the solution, sketches a detailed drawing, and uses appropriate units. All supporting work is shown in detail.	Student determines the solution and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) 10–2, 10-10, 12-6	Student determines the solution and sketches a drawing. Work contains an intrusive error or work is incomplete.	Student makes an attempt. Work contains intrusive errors.	
The student solves problems involving distance; uses geometric properties to solve problems involving angles, lines, or right triangle ratios; and justifies solution(s) using mathematics and sketching diagrams. Question 4 DOK 3	Student correctly determines the solution, sketches a detailed drawing, and uses appropriate units. All supporting work is shown in detail.	Student determines the solution and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) –10–2, 10-10, 12-6	Student determines the solution and sketches a drawing. Work contains an intrusive error or work is incomplete.	Student makes an attempt. Work contains intrusive errors.	

Comments _____

Score _____ Scorer’s Initials _____

Section 4. TASK RUBRIC: At the Beach

Scorer 2: Instructions to Scorer: Use a magic marker to highlight the portion of each row in the rubric that matches the student’s performance. Highlight the column at the bottom that summarizes the overall performance.

Expectations	Exceeds standard 4	Meets standard 3	Nearly meets standard 2	Below standard 1	0
<p>The student uses geometric properties or theorems to solve problems involving angles or right triangle ratios. Demonstrates conceptual understanding by sketching diagrams. Question 1 DOK 2</p>	<p>Student correctly calculates the distance from Danielle to the rock, sketches a detailed drawing, and uses appropriate units. All supporting work is shown in detail.</p>	<p>Student calculates the distance from Danielle to the rock and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) 10–2, 10-10</p>	<p>Student calculates the distance from Danielle to the rock and sketches a drawing. Work contains an intrusive error or work is incomplete.</p>	<p>Student makes an attempt. Work contains intrusive errors.</p>	
<p>The student solves problems involving angles and lengths by applying the trigonometric formulas and demonstrates conceptual understanding by sketching diagrams. Question 2 DOK 2</p>	<p>Student correctly calculates the distance from Danielle to the island, sketches a detailed drawing, and uses appropriate units. All supporting work is shown in detail.</p>	<p>Student calculates the distance from Danielle to the island and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) 12–6, 10-10</p>	<p>Student calculates the distance from Danielle to the island and sketches a drawing. Work contains an intrusive error or work is incomplete.</p>	<p>Student makes an attempt. Work contains intrusive errors.</p>	
<p>The student solves problems involving distance; uses geometric properties to solve problems involving angles, lines, or right triangle ratios; and justifies solution(s) using mathematics and sketching diagrams. Question 3 DOK 3</p>	<p>Student correctly determines the solution, sketches a detailed drawing, and uses appropriate units. All supporting work is shown in detail.</p>	<p>Student determines the solution and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) 10–2, 10-10, 12-6</p>	<p>Student determines the solution and sketches a drawing. Work contains an intrusive error or work is incomplete.</p>	<p>Student makes an attempt. Work contains intrusive errors.</p>	
<p>The student solves problems involving distance; uses geometric properties to solve problems involving angles, lines, or right triangle ratios; and justifies solution(s) using mathematics and sketching diagrams. Question 4 DOK 3</p>	<p>Student correctly determines the solution, sketches a detailed drawing, and uses appropriate units. All supporting work is shown in detail.</p>	<p>Student determines the solution and sketches a detailed drawing. Work may contain a minor error(s) or lack detail. M (G&M) –10–2, 10-10, 12-6</p>	<p>Student determines the solution and sketches a drawing. Work contains an intrusive error or work is incomplete.</p>	<p>Student makes an attempt. Work contains intrusive errors.</p>	

Comments _____

Score _____ Scorer’s Initials _____