

Buried Treasure RUBRIC

Name _____

DATE _____ Period ____

Final Grade _____

Map 1

_____ (4) Caleb's Angle drawn correctly/ Labeled

_____ (4) Keegan's Angle drawn correctly/Labeled

_____ (2) Distances between Pirates/Labeled

_____ (5) Treasure marked accurately

_____ (5) Correct postulate for the solution

_____ (5) Explained in complete sentences

Map 2

_____ (5) Marked Hangman Tree to treasure/Labeled

_____ (5) Marked Skull to treasure/Labeled

_____ (5) Treasure marked accurately

_____ (5) Correct Postulate for the solution

_____ (5) Explained in complete sentences

Map 3

_____ (5) Angle measured correctly from Captain to Fuchs/Labeled

_____ (10) Two locations marked at 60 paces

_____ (5) Correct postulate for the solution

_____ (5) Explained in complete sentences

Label

_____ (25) instruction sheet/answer sheet/color/effort/unique presentation/creativity/stapled maps in order

Buried Treasure Bonus Project

This bonus project applies the conjectures for congruent triangles to aid in the discovery of Captain Cooper's buried treasures. Using the maps, construction tools, and following directions very carefully.

This bonus project is due on _____ stapled in order. No late bonus projects will be accepted. Talk to me ahead of time!

Requirements:

Find location of buried treasure on 45 points three maps, clearly showing all constructions and measures of segments and angles. You must use a compass, ruler, and protractor. Leave arc marks and extensions as proof of work.

Answer each question completely (complete 30 points sentences!).

Identify the postulate or theorem used and state the particular parts that are used for that postulate or theorem.

Label your map clearly, include the instruction 25 points

Sheet, and answer sheet. Neatness, color the maps, unique and creative presentation, etc.

Only the most foolish of mice would hide in a cat's ear. But only the wisest of cats would think to look there. -Andre Mercer

Buried Treasure

Use three maps to find the locations of the buried treasures (number the maps!).

1. Pirate Caleb is standing at the edge of West-end Bay (C), and his cohort, pirate Keegan, and is 75 paces to the north at point K. Each pirate can see Captain Cooper off in an easterly direction burying a treasure. With his sextant, Caleb (Caleb is the vertex) measures the angle between the Captain and Keegan and finds that it is 105° . With his sextant, Keegan (Keegan is the vertex) measures the angle between the treasure and Caleb and finds it to be 32° . Caleb and Keegan mark their positions with large boulders and return to their ship, confident that they have enough information to return later and recover the treasure. Can they recover the treasure? Which conjecture (SSS, SAS, ASA or SAA) guarantees they'll be able to find it? If it is possible, use your geometric tools to locate the position of the treasure on the map. Mark it with an X. (Leave your arc marks for full credit.)

2. Captain Cooper is convinced someone in his crew stole his last treasure. He has decided to be more careful about burying his latest booty. He gives his trusted first mate, Eric, two ropes, the lengths of which only the Captain knows. The Captain instructs Eric to nail one end of the shorter rope to Deadman's Tree (D) and secure the longer rope through the eyes of Skull Rock (S). The Captain, with the ends of the two ropes in one hand and the treasure chest tucked under the other arm, walks away from the shore to the point where the two ropes become taut. The Captain buries the treasure at the point where the two ropes come together, collects his ropes, and returns confidently to the ship. Locate the position of this second treasure on the map if the two ropes are 112 paces and 95 paces in length. Mark the treasure location on your map. Has the Captain given himself enough information to recover the treasure? Which conjecture (SSS, SAS, ASA, or SAA) insures the uniqueness of the location?

3. After the theft of two very important ropes from his locker and the subsequent disappearance of his trusted first mate, Eric; Captain Cooper is determined that no one shall find the location of his latest buried treasure. The Captain, with his new first mate, Fuchs, walks out to Hangman's Point (H). The Captain instructs his first mate to walk inland along a straight path for a distance of 125 paces. There Fuchs is to drive his sword into the ground for a marker (M), turn and face in the direction of the captain, turn at an arbitrary angle to the left, continuing to walk for another 80 paces, stop and wait for the Captain. The Captain measures the angle formed by the lines from Fuchs to himself and from himself to the sword. The angle measures 30° . The Captain places a boulder where he is standing (D), walks around the bay to Fuchs and instructs him to bury the treasure at this point. Alas, poor Fuchs is buried with the treasure. Has the Captain given himself enough information to locate the treasure? If he has, determine the unique location of the treasure. If he does not have enough information, explain why not. How many possible locations for the treasure are there? Find them on the map.





