Math 3Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 7: Logarithms Project**

**The Game’s Afoot**

The following is a synopsis of the first part of an unpublished story.  Your task is to solve the mystery and write the rest of the story.  Your conclusion must include the mathematics of the solution.  It should be written in story form and incorporate the mathematics within the dialogue and other prose as smoothly and naturally as possible.  Be creative, but don’t arrest the wrong individual!

**The Case of the Cooling Corpse**

It was a dark and stormy night.  Holmes and Watson were called to the scene of the murder by Inspector Lestrade of the police.  The victim was a wealthy but cruel man.  He had many enemies.

The most likely suspects are the wife, the business partner, and the butler.  Each has an equally strong motive.  Each also has an alibi.  The wife claims to have spent the entire evening at the theater across town.  She was seen leaving the theater at 10:30 p.m. and returned home at 11:00 p.m., going straight up to her bedroom.  Her return was verified by the upstairs maid.  The business partner claims to have spent the evening working on papers at the office.  His wife and household staff verified that he returned home at 10:30 p.m.  The butler was on his night off.  He claims to have been at the local pub until 10:00 p.m.  The butler returned to his quarters above the carriage house at 10:05 p.m. and did not leave.  This was verified by the other servants.

The body was found in the victim’s study.  Holmes arrived at the scene at 4:30 a.m.  The room was unusually warm and stuffy.  One of the police officers went to open a window.  Holmes admonished him to delay that action until he had completed his investigation of the crime scene.  He instructed Watson to determine the temperature of the body.  This was found to be 88.0°F.  Holmes questioned the servants as to the room temperature during the evening and learned that the man had liked the room warm and that the temperature in the study was always very near the current 76°F.  Holmes asked Watson to take the temperature of the body again at the conclusion of his inspection of the scene, two hours after the first reading.  It was 85.8°F.

**Specific Assignment Requirements**

* Finish the story, explaining how Holmes and Watson are able to determine the killer based on their measurements. Make it as creative as you would like, but be sure to include the math.
* Some outside research will be required to determine the necessary equation. That said, if you find another VALID mathematical solution, you can use that to write and defend your ending of the story.
* Please write with proper grammar, spelling, usage, and syntax, as if you were truly writing for publication.
* Your story should be a minimum of 1 page single-spaced or 2 pages double-spaced with 1 inch margins and 12 pt. font. If handwritten, the story should be two pages (or one front and back). It is due on Friday, April 25. Late work WILL be penalized 20 points, unless I gave it back for resubmission.

**Rubric:**

10 points – Student determines the correct killer

40 points – Student defends his choice using appropriate mathematical concepts and justification

20 points – Story is well-written, clear, and integrates the math content

30 points – At standard completion of the assignment

Up to 20 points extra – Artistic representation of the story, including the mathematical concept.