

Carefully Defining Quantities

Scenario 1

A group of three students conduct an experiment to see how far a block of wood moves on different surfaces before stopping. They take turns placing the block at the top of a ramp and letting go without applying any force. The block slides down the ramp and across three surfaces: carpet, sandpaper, and tile.

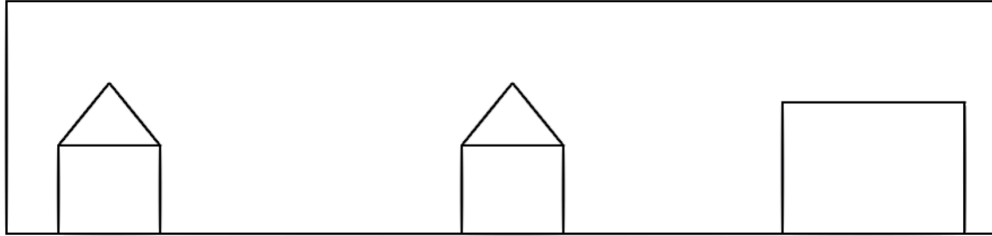
Each student measures the distance the block moved on one surface without discussing the results with the other students. You ask the student to report their measurements and record them on a data table. As each student records his or her data, you start to sweat. This is the data your students reported:

Student (Surface)	Cathy (Carpet)	Samuel (Sandpaper)	Tonya (Tile)
Distance Measurement	8 in	8 in	8 in

What happened?

Scenario 2

Josh lives 100 yards from school, and Sara lives 40 yards from school along the same road.



1. How far from her house would Sara need to walk to be 10 yards from school?
 - a. There are two distances referenced in this scenario. Define each carefully and state the meaning of 0 for each.
 - i. _____

 - ii. _____

 - b. Answer the question.

Scenario 3

2. Josh is walking home from school, and Sarah joins him as he passes her house. When Sara has walked 32 yards, how far has Josh walked?
 - a. There are two distances referenced in this scenario. Define each carefully and state the meaning of 0 for each.
 - i. _____

 - ii. _____

 - b. Answer the question.

Scenario 4

3. How far does Josh need to walk from home to meet Sara halfway through her walk home from school?
 - a. There are two distances referenced in this scenario. Define each carefully.
 - i. _____

 - ii. _____

 - b. Answer the question.