

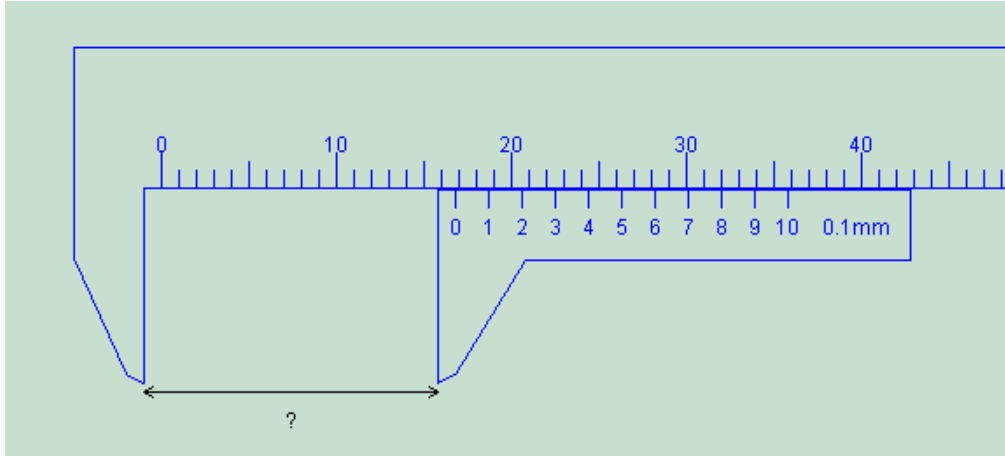
## PreLab: Measurement and Error Analysis

**Instructions:** Prepare for this lab activity by answering the questions below. Note that this is a **PreLab**. It must be turned in at the start of the lab period. Time cannot be given in lab to perform PreLab activities. After the start of lab activities, PreLabs cannot be accepted. Explain your answers. Points will be taken off if your work is not neat and well organized.

1. (5 points 1408/4 points 1420) Describe the proper way to use a meter stick and why this technique is necessary. (Answer in complete sentences in your own words.)

2. (2 points) What is the reading on the vernier caliper scale below? \_\_\_\_\_

For help see video at <https://www.youtube.com/watch?v=4hINi0jdoeQ>



- (5 points 1408/4 points 1420) Explain how you got your answer. (Answer with 3 or more complete sentences.)

3. (3 points) What is the difference between percent error and standard error?

4. (1420 ONLY 2 points) Find the first derivative of  $f(x) = (4x^2 + 7x - 3)(x^4 + 6x^3 - 5x)$