

Basic Measurement 110

Name: _____

Date: _____

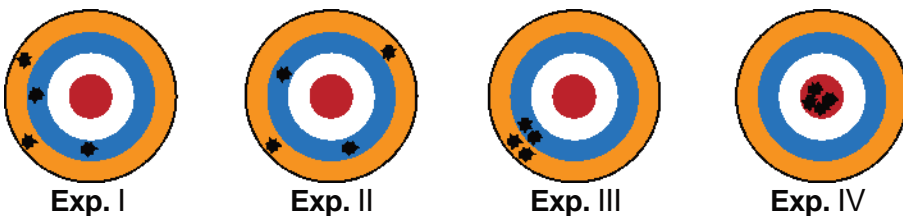
When manufacturing parts, it is important that the parts fit together in a specific manner. Replacement parts must also fit together the same way as the original parts. Take for instance the size of your jeans. You buy a pair of name brand jeans size 34 x 34. If you purchase two pairs of jeans, you expect that both of the pairs of jeans will fit the same. In order to ensure they fit, companies must accurately measure and precisely sew the jeans every time. To gain a better understanding for accuracy and precision, complete the following questions.

Accuracy and Precision

	Trial 1	Trial 2	Trial 3
Student A	5.43 g	5.44 g	5.42 g
Student B	5.43 g	5.40 g	6.43 g
Student C	5.54 g	5.56 g	6.41 g
Student D	6.86 g	6.86 g	6.87 g

1. Use the above table for the following question. Four students measured the mass of one 5.43 g sample three times. The results in the above table indicate that the data collected by the students.
 - a. Which student results represents the greatest precision, but worst accuracy? Explain your answer.
 - b. Which student results represents the second greatest precision and the greatest accuracy? Explain your answer.

2.



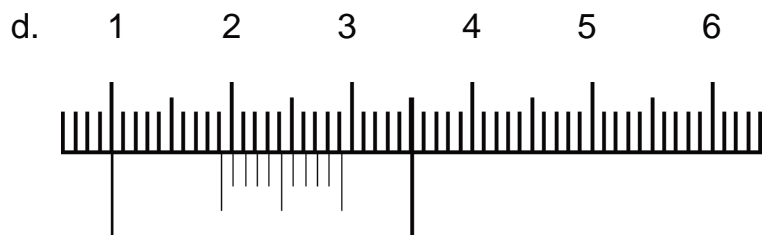
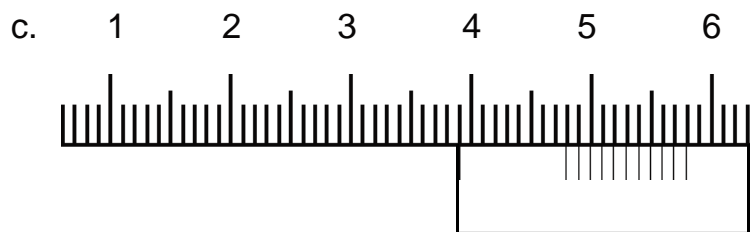
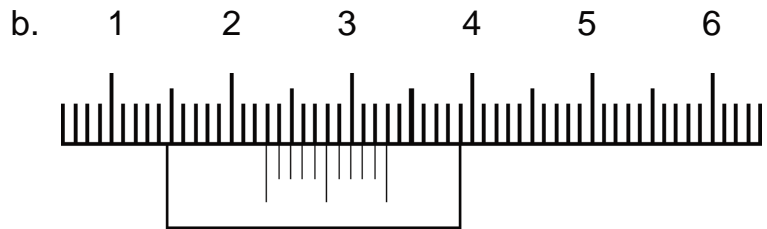
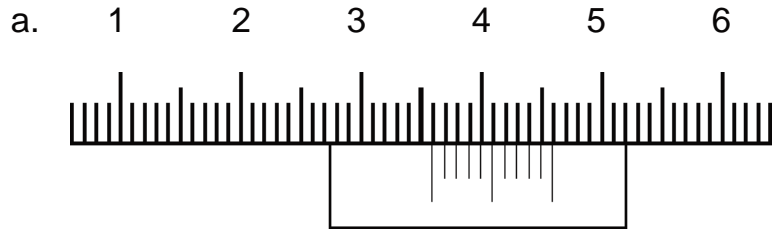
Using the targets in questions two, describe each experiment as having good or bad accuracy and precision.

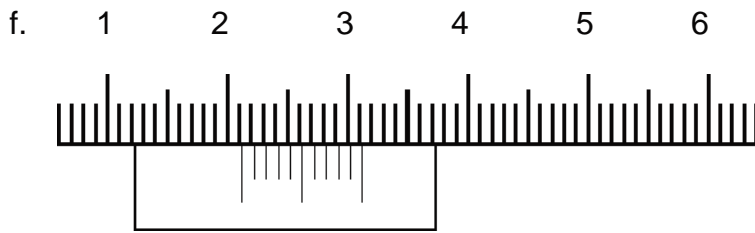
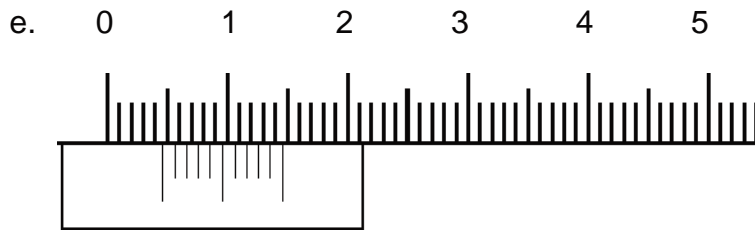
Experiment	Precision Good or bad	Accuracy Good or bad
Exp I		
Exp II		
Exp III		
Exp IV		

3. A measurement was taken three times. The correct measurement was documented to be 68.1 mL. Knowing the true value, circle whether the following data represents measurements that are accurate, precise, both, or neither.

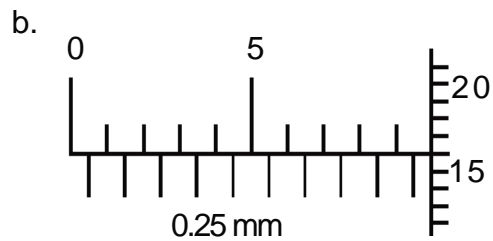
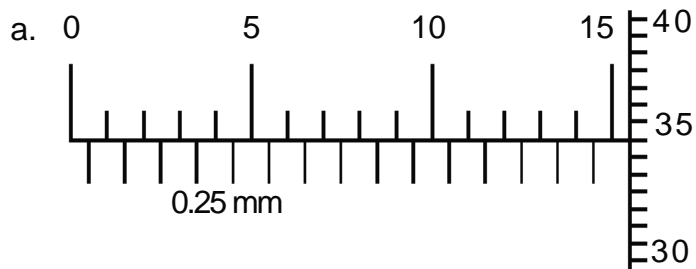
- 78.1 mL, 43.9 mL, 2 mL accurate, precise, both, neither
- 68.1 mL, 68.2 mL, 68.0 mL accurate, precise, both, neither
- 98.0 mL, 98.2 mL, 97.9 mL accurate, precise, both, neither
- 72.0 mL, 60.3 mL, 68.1 mL accurate, precise, both, neither

4. Many measuring devices like manual calipers and micrometers use a Vernier Scale to measure materials with greater precision. Read the following Vernier caliper measurements.





5. Record the measurements of the following micrometer measurements.



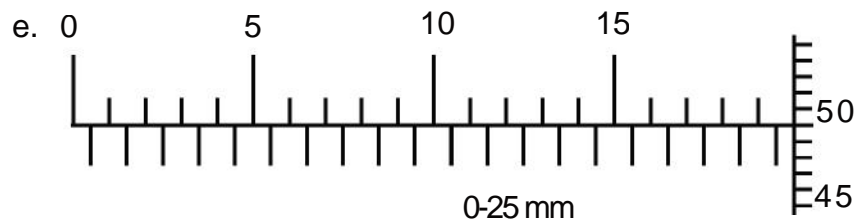
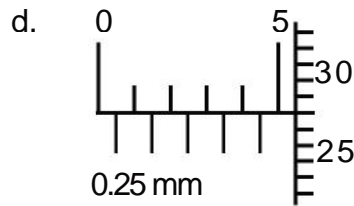
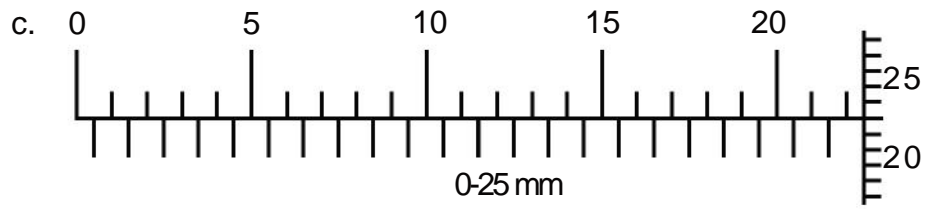


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