

Significant Digits Precision and Accuracy

Name _____
Period _____ Date _____

1. Using the rules on page 40, determine which of the digits in each of the following numbers is significant, then circle each digit that IS significant.

57 volts

44.011 sec

0.00021 m

5.0 ml

499 km

500 cm

500.0 cm

0.0430 mm

2. Now use the rules on page 41 to determine the number of significant digits in calculations. Calculate the answers to the following problems, then tell how many significant digits each answer has.

$$\begin{array}{r} 3.14 \\ \times 0.19 \\ \hline \end{array}$$

$$\begin{array}{r} 121.0 \\ + 122 \\ \hline \end{array}$$

$$\begin{array}{r} 87.00 \\ \times 3.05 \\ \hline \end{array}$$

$$\begin{array}{r} 0.0044 \\ \times 1.50 \\ \hline \end{array}$$

SD: _____ _____ _____ _____

See pages 36 – 38 for questions 3 – 6.

3. Look at the metric side of the plastic ruler. What is the precision of the rulers? (Hint: What is the smallest unit of length shown?)

4. Each person at your table should measure the long end of your textbook. Record all results below. How precise are the measurements? (Very precise, Somewhat precise, Not precise)

5. If the accepted value for the length of the book is 28.3 cm, how accurate was YOUR measurement? (less than .1 cm = good, .1 to .2 cm = fair, more than .3 cm = poor)

6. Suppose you are shooting darts at a dartboard. You are aiming for the 50-point region in the center. Every one of your darts hits the 10-point region on the left side. Describe your precision and your accuracy.