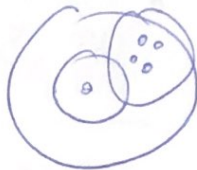



5.0.00.

170
 1.7×10^{-1}
 1.7×10^2

Chapter 2 continued

1. Complete the following:

Term	Definition	Picture/ example
Precision	How close a set of measurements are to each other.	
Accuracy	How close the measurements are to the true value.	
Significant Figures	The non-Place holding digits in a recorded value.	0.00 <u>10800</u>

2. There is always uncertainty in measurements.

3. What are the Rules for Significant Figures?

a. All non-zeros are significant

b. All zeros to the left of the 1st non-zero are not

significant .003

c. All zeros between non-zeros are significant.

d. All zeros after the dec. pt. are sig.

e. Zeros at the end of a whole # w/o a decimal are ambiguous + should be avoided by sci notation.

3.0 × 10²

3.0102 × 10⁵
.001 × 10⁻²

4. What are the Rules for Rounding?

a. If the digit you want to drop is less than 5, drop that digit + any to the right.

b. When the digit you want to drop is 5 or greater, inc. value of last digit by 1.

5. What is the rule for adding and subtracting Significant Figures?

Results have to be the same # of dec. places as the quantity w/ the least # of dec. places.

6. What is the rule for multiplying and dividing significant figures?

Same # of sig figs as the part of the prob. that has the fewest

sig figs.

7. Practice: Adding and Subtracting Significant Figures

$$\begin{array}{r} 9.98 \\ + 9.6 \\ 9. \\ \hline 29. \end{array}$$

a. Add the following together:
a. $3.65 + 3.099 + 14.235 + 156.9909$

$$177.97$$

b. $9.98 + 9.6 + 9.$

$$29.$$

c. $9.0 + 9. + 9.23$

$$27.$$

b. Subtract the following:

a. $4.56 - 2.03363$

$$2.53$$

b. $2.5 - 3.$

$$-0.5$$

c. $3001. - 600.236$

$$\begin{array}{r} 3001. \\ - 600.236 \\ \hline \end{array}$$

$$\begin{array}{r} 3.65 \\ + 3.099 \\ 14.235 \\ 156.9909 \\ \hline \end{array}$$

$$\begin{array}{r} 9.0 \\ + 9. \\ 9.23 \\ \hline \end{array}$$

$$-5. \times 10^1$$

$$\boxed{3.}$$

$$2401.$$

$$1.00$$

$$300,000,000$$

8. Multiplying and Dividing Significant Figures:

a. Multiply the following:

i. 2.36×10.2

$$24.1$$

ii. 3.265×0.332

$$1.08$$

b. Divide the following:

i. $3.06 / 1.0$ -2

$$\boxed{3.1}$$

significant figures

ii. 6.32/ 1.0236

6.17

Conversions:

A. Convert 50060cm to meters:

$$\frac{50060 \text{ cm}}{100 \text{ cm}} = 500.6 \text{ m}$$

B. Convert 60 Liters to Milliliters.

$$\frac{60 \text{ L}}{1 \text{ L}} = 60000 \text{ ml}$$