

Chemistry – Unit 1 Significant Figures

Name: _____
Per: _____ Date: _____

Every measurement we make has some inherent error due to the limitations of the measuring instrument and the experimenter. The numerical value recorded for a measurement should give some indication of the reliability (precision) of that measurement. After reading the rule, write the number of sig figs on the space provided. The answers are provided on the bottom of the page.

Rules for Determining Significant Figures

- All nonzero digits are significant.
438 _____
26.42 _____
.653 _____
- All zeros between two nonzero digits are significant
506 _____
1023.405 _____
900.43 _____
- Zeros to the right of a nonzero digit, but to the left of an understood decimal point, are not significant. If such zeros are known to have been measured, they are significant and should be specified as such by inserting a decimal point to the right of the zero
4830 _____
60 _____
4830. _____
60. _____
10200300 _____
- In numbers less than one, zeros to the right of a decimal point that are to the left of the first non-zero digit are never significant. They are place holders.
0.06 _____
0.00407 _____
0.0056 _____
- In numbers less than 1, the zero to the left of the decimal point is never significant. It is there to make sure that the decimal point is not overlooked.
0.8 _____
0.104 _____
0.002 _____
- All zeros to the right of a decimal point and to the right of a nonzero digit are significant.
8.0 _____
16.40 _____
0.5070 _____

Addition and Subtraction:

Your answer can't have more significant figures **after the decimal** than the smallest number of significant figures after the decimal in any of the numbers used to obtain the answer.

Multiplication and Division:

Your answer can't have more **total** significant figures than the smallest total number of significant figures in any of the numbers used in the calculation.

Answers (in order): 1) 3, 4, 3 2) 3, 7, 5 3) 3, 1, 4, 2, 6 4) 1, 3, 2 5) 1, 3, 1 6) 2, 4, 4