

Unit 1 Worksheet 2 – Significant Figures

The zero rules for significant figures follow:

- (1) Zeros are significant when bounded by non-zero digits.
- (2) Zeros preceding the first non-zero digit are never significant.
- (3) If a decimal point is explicitly expressed, all zeros after the first non-zero digit are significant.
- (4) If a decimal point is not explicitly expressed, zeros following the last non-zero digit are not significant.

For problems 1 - 10, in the first blank give the number of significant digits in the measurement and in the second blank, list the number(s) of the zero rule(s) that were necessary for your decision. For example:

 3 1,4 **9070 m**

Problems

- | | | | | | |
|----------|-------|---------------------|-----------|-------|-----------|
| 1. _____ | _____ | 0.025 s | 2. _____ | _____ | 405 kg |
| 3. _____ | _____ | 20.50 m | 4. _____ | _____ | 7 600 cm |
| 5. _____ | _____ | 0.0102 kg | 6. _____ | _____ | 0.1020 g |
| 7. _____ | _____ | 0.004 ml | 8. _____ | _____ | 20 010 mg |
| 9. _____ | _____ | 2.0×10^2 m | 10. _____ | _____ | 500 ml |

As a general rule, we say that when taking measurements, we are justified in estimating to tenths of the smallest marked graduation on the measuring instrument.

For each of the following problems, in the blank record the correct measurement followed by the appropriate explanation of the rule(s) utilized. For example:



Figure 1

 0.73 m The meter stick is graduated in tenths of a meter so the measurement should be estimated to hundredths of a meter.

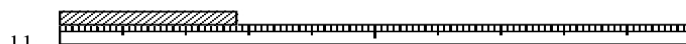


Figure 2

