

SIGNIFICANT FIGURES

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A measurement can only be as accurate and precise as the instrument that produced it. A scientist must be able to express the accuracy of a number, not just its numerical value. We can determine the accuracy of a number by the number of significant figures it contains.

- 1) All digits 1-9 inclusive are significant.
Example: 129 has 3 significant figures.
- 2) Zeros between significant digits are always significant.
Example: 5,007 has 4 significant figures.
- 3) Trailing zeros in a number are significant only if the number contains a decimal point.
Example: 100.0 has 4 significant figures.
100 has 1 significant figure.
- 4) Zeros in the beginning of a number whose only function is to place the decimal point are not significant.
Example: 0.0025 has 2 significant figures.
- 5) Zeros following a decimal significant figure are significant.
Example: 0.000470 has 3 significant figures.
0.47000 has 5 significant figures.

Determine the number of significant figures in the following numbers.

- 1. 0.02 _____
- 2. 0.020 _____
- 3. 501 _____
- 4. 501.0 _____
- 5. 5,000 _____
- 6. 5,000. _____
- 7. 6,051.00 _____
- 8. 0.0005 _____
- 9. 0.1020 _____
- 10. 10,001 _____

Determine the location of the last significant place value by placing a bar over the digit (Example: 1.700)

- 1. 8040 _____
- 2. 0.0300 _____
- 3. 699.5 _____
- 4. 2.000×10^2 _____
- 5. 0.90100 _____
- 6. 90,100 _____
- 7. 4.7×10^8 _____
- 8. 10,800,000. _____
- 9. 3.01×10^{21} _____
- 10. 0.000410 _____