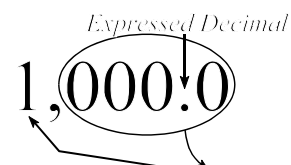


Counting Significant Digits

An index card is 12.65 cm long ... approximately. The last digit is estimated since the smallest space on the ruler is 0.1 cm. The same index card is also 126,500 μm long. The 5 is still the estimated digit. The zeros are only place holders. They are not significant. Significant digits are the ones that are measured and the one (and *only* one) that is estimated. All nonzero numbers are significant. Place holding zeros, the leading zeros between the decimal and the first nonzero digit or the trailing zeros in a number that has no expressed decimal, are not significant. One way of recognizing significant digits is the Atlantic-Pacific rule. When the decimal is absent, count from the first nonzero digit toward the Atlantic coast. When the decimal is present, count from the first nonzero digit toward the Pacific coast.



Tell the number of significant digits in each of the following measurements.

- | | |
|-----------------------------|-------------------------------------|
| 1. 48 cm _____ | 7. 71.60 g _____ |
| 2. 306.2 g _____ | 8. 0.00432 mm _____ |
| 3. 0.329 m _____ | 9. 10.0 kg _____ |
| 4. 83.9520 °C _____ | 10. 3.60×10^{15} sec _____ |
| 5. 3700 mm _____ | 11. 6.24×10^{-4} m _____ |
| 6. 400. cm^3 _____ | 12. 82.000 g _____ |