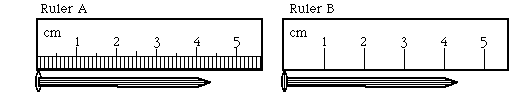
SIGNIFICANT DIGITS IN SCIENCE

MEASUREMENT AND CALCULATIONS

UNCERTAINTY IN MEASUREMENT



SIGNIFICANT FIGURES (DIGITS)

RULES FOR COUNTING SIGNIFICANT FIGURES

1. Nonzero integers
2. Zeros
3. Leading zeros
4. Captive zeros
5. Trailing zeros
6. Exact numbers

Examples

1. 0.0108 g
2. 0.0050060 g
3. 5.030 x 103 ft
4. 110 riders started, but only 60 finished

CHECK POINT

1. 0.000304 g
2. 1.270 x 102 m
3. 0.9020 L
4. 480 cars were in the parade

Determining Significant Figures (Digits) in Calculations

1. Multiplication and Division

EXAMPLES

1. 12.6 x 0.53
2. 8.315 ÷ 298
3. 5.44 x 0.235
4. Addition and Subtraction

EXAMPLES

1. 12.11 + 18.0
2. 0.6875 – 0.1
3. 32,575 + 985.663

What if you have to do both?

EXAMPLES

a. (12.6 x 0.53) – 4.59

b. (25.36 – 4.15) ÷ 2.317

SCIENTIFIC NOTATION

What is it used for?

Turning numbers greater than one into scientific notation

Turning numbers less than one into scientific notation

CHECK POINT

* 1. 12,500
  2. 247
  3. 0.0024
  4. 0.0000072
  5. 350,000,000