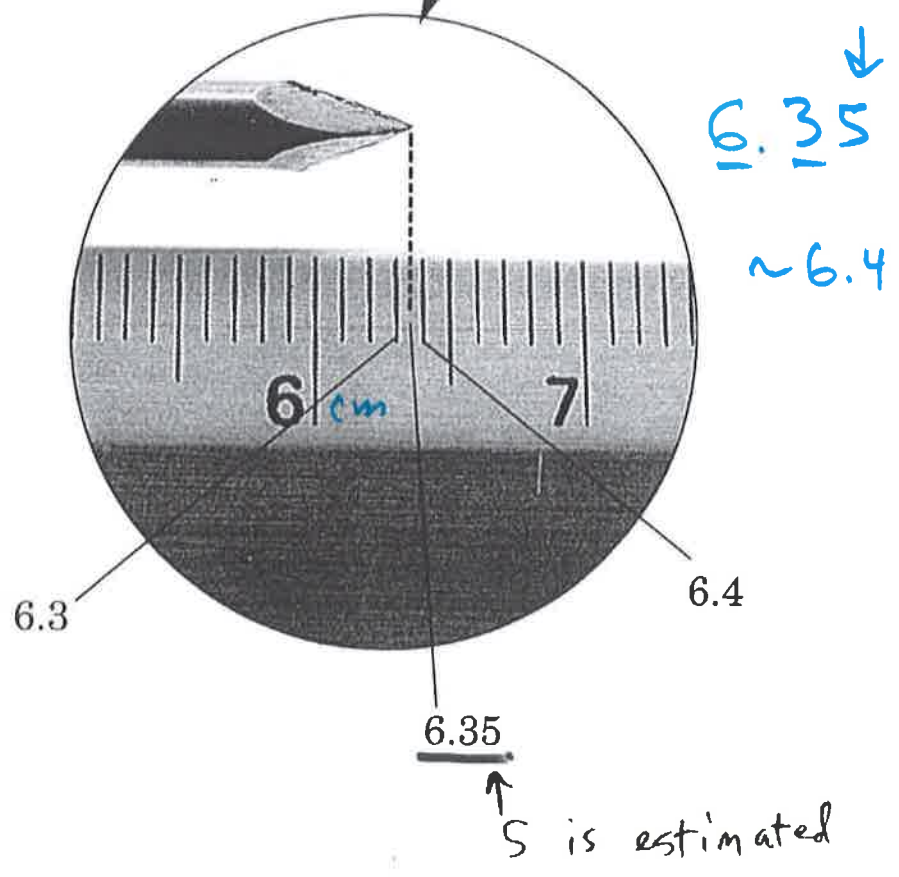
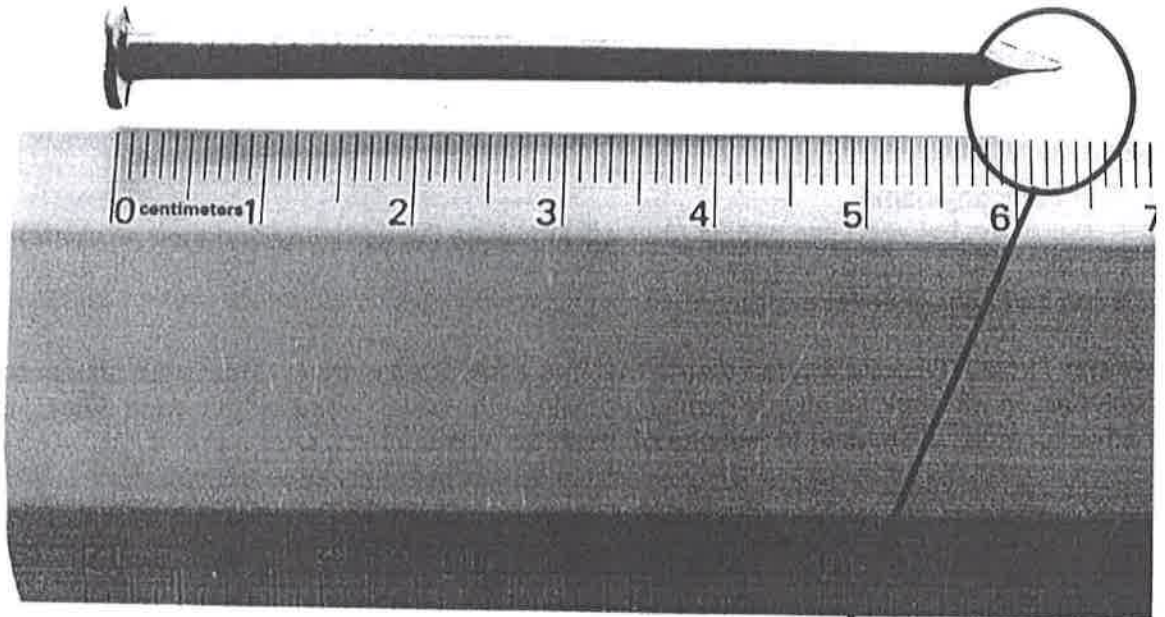


# Reporting Measurements Using Significant Figures

- all measured digits +  
1 estimated digit



**SIG FIG RULES:**

1) All nonzero digits = significant

ex)  $\underline{732} = 3$       $\underline{32} = 2$       $\underline{45.31} = 4$

2) Zeros between nonzeros = significant

ex)  $\underline{1032} = 4$       $\underline{10,001} = 5$       $\underline{1.01} = 3$

3) Zeros in front of nonzeros = not significant (they are just placeholders)

ex)  $0.\underline{01} = 1$       $0.\underline{504} = 3$       $0.000000\underline{54} = 2$  <sup>km</sup>

4) Zeros at the end of a number and to the right of a decimal = significant

ex)  $\underline{11.0} = 3$       $\underline{1.0000} = 5$       $101.\underline{0} = 4$

5) Zeros at the end of a number and to the left of a decimal = not significant unless there is actual decimal point written in!

ex)  $\underline{100} = 1$       $\underline{100.} = 3$       $32,000 = 2$

**ONLY USE SIG FIGS FOR MEASURED VALUES (not in math class)**

$\underline{10} = 1$

$\underline{1050} = 3$

$\underline{10.0} = 3$

$0.\underline{1010} = 4$

$\boxed{0.015} = 2$

$\boxed{1.0} \times 10^3 = 1000.$   
 $\quad \quad \quad 2 \quad \quad \quad 1000$   
 ~~$\times 10$~~

Notes 9/16 MATH with SIG FIGS

X and ÷



$$\begin{array}{r} 110.20 \text{ g} \\ 115.30 \text{ g} \\ \hline 5.10 \text{ g} \end{array}$$

ex)  $31.3 \text{ m}$  (3 sf)  $\times$   $5 \text{ m}$  (1 sf, least accurate) =  $156.5 \text{ m}^2$  (unrounded)

$\approx 200 \text{ m}^2$  (rounded, 4 sf)

$D = \frac{\text{mass (g)}}{\text{vol (mL)}} = \frac{29.01 \text{ g}}{7.90 \text{ mL}} = 3.67215$

$= 3.67 \text{ g/mL}$  (rounded)

+ and -

$$\begin{array}{r} 25.1 \text{ m} \\ + 2.03 \text{ m} \\ \hline 27.13 \text{ m} \\ \hline 27.1 \text{ m} \end{array}$$

$$\begin{array}{r} 29 \text{ m} \\ + 45.5 \text{ m} \\ \hline 74.5 \\ \hline 75 \text{ m} \end{array}$$

$$\begin{array}{r} 300 \text{ m} \\ - 16 \text{ m} \\ \hline 284 \text{ m} \\ \hline 300 \text{ m} \end{array}$$

349  
250