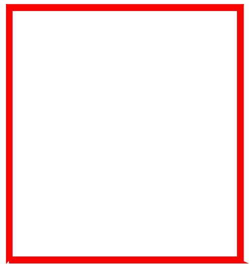
Uncertainty in Measurement

- *Measured* quantities are always inexact.

Accuracy



$$\frac{(9.97)(6.5)}{4.321} \quad ,$$

6. *Exact numbers*, which are inherently integers or are set by definition, are not limited in their significant digits.

Some exact numbers:

(a) All integer fractions: ½, a , f

(b) Counted numbers: "15 people"

(c) Conversions *within* a unit system:

12 inches / 1 foot

Relationships between units in *different* unit systems are *usually* not exact:

2.2 lb. = 1.0 kg	2 sig. figs.
2.2046223 lb. = 1.0000000 kg	8 sig. figs.

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