

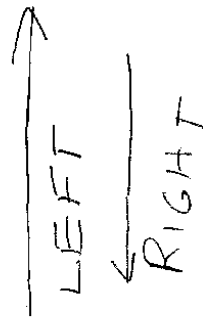
$$\text{RATIO} = \frac{\text{VALUE ONE}}{\text{VALUE TWO}} = \frac{x}{y} = \frac{\text{DEPENDENT}}{\text{INDEPENDENT}}$$

### MEASUREMENT SYSTEMS

BASE UNITS	ENGLISH	METRIC
LENGTH	IN, FT, YDS, MI	m
MASS	lbs.	g
TIME	s	s

### METRIC PREFIXES

Terra	T	$1 \times 10^{12}$	) 3
Giga	G	$1 \times 10^9$	) 3
Mega	M	$1 \times 10^6$	) 3
Kilo	k	1,000	) 3
Hecta	H	100	
Deca	D	10	
	BASE		
deci	d	$\frac{1}{10}$	
centi	c	$\frac{1}{100}$	
mili	m	$\frac{1}{1,000}$	) 3
micro	$\mu$	$\frac{1}{1 \times 10^6}$	) 3
nano	n	$\frac{1}{1 \times 10^9}$	) 3
femto	f	$\frac{1}{1 \times 10^{12}}$	) 3



### EXAMPLE

$$.01 \text{ dm} = 0.01 \text{ Dm}$$

# VECTOR

- MAGNITUDE + DIRECTION  $\vec{r} = 45.0 \text{ km} @ \theta = 60.0^\circ$

- COMPONENTS  $\vec{r} = 25.0 \text{ km} \hat{x} + 35.0 \text{ km} \hat{y}$

## UNIT VECTORS

$$\hat{x} = \frac{\vec{x}}{|\vec{x}|} ; \hat{y} = \frac{\vec{y}}{|\vec{y}|} ; \hat{z} = \frac{\vec{z}}{|\vec{z}|}$$