

Metric Prefixes

- 1) Given over 1
- 2) choose equality
- 3) set up to cancel diagonally
- 4) \times tops
 \times bottoms
 \div

multiply by 10

\times move to right

hard sounds

kilo *k*
 $1000 = 10^3$
1000 units = 1 kilounits

hecto *h*
 $100 = 10^2$
100 units = 1 hectounits

deka *da*
10
10 units = 1 decaunits

UNIT

deci *d*
 $1 = 0.1 = 10^{-1}$
10
1 unit = 10 deciunits

centi *c*
 $1 = 0.01 = 10^{-2}$
100
1 unit = 100 centunits

milli *m*
 $1 = 0.001 = 10^{-3}$
1000
1 unit = 1000 millunits

divide by 10

\div more decimal left

soft sounds

$$100 \text{ cm} = 1 \text{ m}$$

$$\frac{100 \text{ cm}}{1 \text{ m}} \text{ or } \frac{1 \text{ m}}{100 \text{ cm}}$$

more decimal the number of zeros

tera	T	1,000,000,000,000
giga	G	1,000,000,000
mega	M	1,000,000
kilo	k	1,000
hecto	h	100
deka	da	10
no prefix means: 1		
deci	d	0.1
centi	c	0.01
milli	m	0.001
micro	μ	0.000001
nano	n	0.000000001
pico	p	0.000000000001
femto	f	0.000000000000001
atto	a	0.000000000000000001

big

small

- 10^{12}
- 10^9
- 10^6
- 10^3
- 10^2
- 10^1
- 10^0
- 10^{-1}
- 10^{-2}
- 10^{-3}
- 10^{-6}
- 10^{-9}
- 10^{-12}
- 10^{-15}
- 10^{-18}

$$\frac{2.38 \text{ cm} \times 1 \text{ m}}{1 \quad | \quad 100 \text{ cm}} = \frac{2.38}{100} = .0238 \text{ m}$$

\div more to left

$$.0238 \text{ m} \times \frac{1000 \text{ mm}}{1 \text{ m}} = \frac{23.8}{1} = 23.8 \text{ mm}$$

\times move to right