

# Problem Solving

- 1) Read carefully,
- 2a) knowns, unknowns 2b) diagram
- 3) Equation
- 4) solve
- 5) units, sig figs 2 or 3 sig figs

check answer to see if it makes sense

43,720 km	.00921 s
<u>43,700 km</u>	.0092
<u><math>4.37 \times 10^4</math> km</u>	

Sci. Notation  $1-10 \times 10^{\square}$

- speed light  $300,000,000 \text{ m/s} = 3.0 \times 10^8 \text{ m/s}$
- radius of earth  $6,380,000 \text{ m} = 6.38 \times 10^6 \text{ m}$
- $.0005262 = 5.26 \times 10^{-4}$

Multiply / Divide

$$\text{ex } \frac{(2 \times 10^6) (6 \times 10^{-4})}{4 \times 10^{-5}} = \frac{12 \times 10^{12}}{4 \times 10^{15}} = 3 \times 10^7$$

$$\text{ex } (6.32 \times 10^{-7}) (4.2 \times 10^{11})$$

$\sqrt{11}$

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$$\text{ex } \frac{(6.32 \times 10^{-7})(4.2 \times 10^{11})}{7.8 \times 10^9}$$

$$\boxed{EE} \quad \boxed{Exp}$$

$$\boxed{\cancel{10^x}}$$

$$\boxed{\cancel{A}}$$

$$= 3.40 \times 10^{-5} \quad \boxed{\times 10^x}$$

Dimensional Analysis - using units to help solve problems

1) How many hours are in 8 weeks

Known: 8 weeks,  $\underbrace{7 \text{ days/week}}$   $\underbrace{24 \text{ hrs/day}}$

Unknown — hours

$$8 \text{ weeks} \left( \frac{7 \text{ days}}{\text{week}} \right) \left( \frac{24 \text{ hrs}}{\text{day}} \right) = \text{hours}$$

1344

$$\boxed{13440 \text{ hrs}}$$

2) 500 lbs  $\rightarrow$  kg  $2.2 \text{ lbs/kg}$

$$500 \text{ lbs} \left( \frac{1 \text{ kg}}{2.2 \text{ lbs}} \right) = 227 \text{ kg}$$