

p.16 2. how many SF do each of the following #'s have:

a)  $214$  - 3 SF      b)  $81.60$  - 4 SF      c)  $7.03$  - 3 SF ✓

d)  $0.03$  - 1 SF      e)  $0.0086$  - 2 SF      f)  $3236$  - 4 SF      g)  $8700$  - 2 SF?

leading 0's are useless

4. write out the following #'s in full w/ the correct # of zeros:

a)  $8.69 \cdot 10^4 \rightarrow 86900$

b)  $9.1 \cdot 10^3 \rightarrow 9100$

c)  $8.8 \cdot 10^{-1} \rightarrow 0.88$

d)  $4.76 \cdot 10^2 \rightarrow 476$  ✓

e)  $3.62 \cdot 10^{-5} \rightarrow 0.0000362$

6. what is the percent uncertainty for the measurement  $3.76 \pm 0.25$  m

$0.25/3.76 \rightarrow 0.0665100 \rightarrow 6.65\%$  ← 2 SF

12. write the following as full (decimal) #'s w/ standard units:

a)  $286.6 \text{ mm} \rightarrow 0.2866 \text{ m}$  ✓      b)  $85 \mu\text{V} \rightarrow 85 \cdot 10^{-6} \text{ V} \rightarrow 0.000085 \text{ V}$

c)  $760 \text{ mg} \rightarrow 0.760 \text{ g}$ ?

d)  $60.0 \text{ ps} \rightarrow 0.0000000600 \text{ s}$

e)  $22.5 \text{ fm} \rightarrow 0.0000000000225 \text{ m}$       f)  $2.50 \text{ gigavolts} \rightarrow 2500000000 \text{ V}$  ✓

13. express the following using the prefixes of Table 1-4:

a)  $1 \cdot 10^6$  volts  $\rightarrow 1 \text{ MV}$

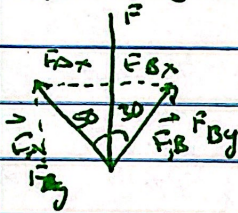
b)  $2 \cdot 10^{-6}$  meters  $\rightarrow 2 \mu\text{m}$

c)  $6 \cdot 10^3$  days  $\rightarrow 6 \text{ kdays}$

d)  $18 \cdot 10^2$  bucks  $\rightarrow 18 \text{ hbucks}$

e)  $8 \cdot 10^{-9}$  pieces  $\rightarrow 8 \text{ npieces}$

27. 2 snowcats tow a housing unit to a new location at McMurdo Base, Antarctica, as shown in Fig 9-46. The sum of the forces  $\vec{F}_A$  &  $\vec{F}_B$  exerted on the unit by the horizontal cables is parallel to the line  $L$ , &  $F_A = 4500\text{N}$ . determine  $\vec{F}_B$  & the magnitude of  $\vec{F}_A$  &  $\vec{F}_B$ .



$$F_{Ax} = -F_{Bx}$$

$$\sin(30) = \frac{F_{Bx}}{F_B}$$

$$\sin(50) = \frac{F_{Ax}}{F_A}$$

$$F_B = \frac{F_{Bx}}{\sin(30)}$$

$$4500 \sin(50) = F_{Ax} = -F_{Bx}$$

$$= 6894.399$$

$$3447.199 = F_{Bx}$$

$$= 6900\text{N}$$

$$\boxed{F_B = 6.9 \times 10^3}$$

$$\vec{F}_{Ax} + \vec{F}_{Bx} = 0\text{N}$$

$$\vec{F}_{Ay} + \vec{F}_{By} = 2892.544\text{N} + 5920.723\text{N} = 8863.267\text{N} \approx 8863\text{N}$$

$$\hookrightarrow \boxed{8.9 \cdot 10^3\text{N}}$$

