

1.) $3.85 \text{ m} \times \frac{10^2 \text{ cm}}{1 \text{ m}} = 385$

$3.85 \text{ m} \times \frac{10^3 \text{ mm}}{1 \text{ m}} = 3850$

$3.85 \text{ m} \times \frac{10^6 \text{ }\mu\text{m}}{1 \text{ m}} = 3.85 \times 10^6$

2.) $339 \text{ mL} \times \frac{1 \text{ L}}{10^3 \text{ mL}} = 0.339 \text{ or } 3.39 \times 10^{-1}$

a mL = cm³ so 2nd answer = 339

3.) use: $F = \frac{9}{5} C + 32$

$F = \frac{9}{5} (800) + 32$
 $= 1472^\circ\text{C}$

4.) $55.8 \text{ km} \times \frac{10^5 \text{ cm}}{1 \text{ km}} = 5.58 \times 10^6 \text{ cm}$

5.) $0.75 \text{ kg} \times \frac{10^6 \text{ mg}}{1 \text{ kg}} = 7.5 \times 10^5 \text{ mg}$

6.) $1500 \text{ mm} \times \frac{1 \text{ km}}{10^6 \text{ mm}} = 1500 \times 10^{-6} = 1.5 \times 10^{-3} \text{ km}$

$$7) \quad 2390 \text{ g} \times \frac{1 \text{ kg}}{10^3 \text{ g}} = 2390 \times 10^{-3} = 2.39 \times 10^0 \\ = 2.39$$

$$8) \quad 0.52 \text{ km} \times \frac{10^3 \text{ m}}{1 \text{ km}} = 5.2 \times 10^2$$

$$9) \quad 65 \text{ kg} \times \frac{10^3 \text{ g}}{1 \text{ kg}} = 6.5 \times 10^4 \text{ g}$$

$$10) \quad 750 \text{ } \mu\text{g} \times \frac{1 \text{ g}}{10^6 \text{ } \mu\text{g}} = 750 \times 10^{-6} = 7.5 \times 10^{-4} \text{ g}$$

$$11) \quad 0.25 \text{ Mm} \times \frac{10^8 \text{ cm}}{1 \text{ Mm}} = 2.5 \times 10^7 \text{ cm}$$

$$12) \quad 30.5 \text{ am} \times \frac{1 \text{ mm}}{10^{15} \text{ am}} = 3.05 \times 10^{-14} \text{ mm}$$

$$13) \quad 31.8 \text{ kg} \times \frac{2.2 \text{ lbs}}{1 \text{ kg}} = 69.96 \text{ lbs}$$

$$14) \quad \frac{0.154 \text{ g}}{1 \text{ mL}} \times \frac{10^3 \text{ mg}}{1 \text{ g}} = 0.154 \times 10^3 \text{ mg/mL} \\ = 1.54 \times 10^2 \text{ mg/mL}$$

$$\frac{1.54 \times 10^2 \text{ mg}}{1 \text{ mL}} \times \frac{10^3 \text{ mL}}{1 \text{ L}} = 1.54 \times 10^5 \text{ mg/L}$$

$$\frac{1.54 \times 10^5 \text{ mg}}{1 \text{ L}} \times \frac{1 \text{ kg}}{10^6 \text{ mg}} = 1.54 \times 10^{-1} \text{ kg/L}$$

15.)

| | | |
|-------------|-----------|-------------|
| Substance A | has range | 51.0 - 51.2 |
| " B | has range | 51.2 - 51.4 |
| " C | has range | 51.4 - 51.6 |
| " D | has range | 51.6 - 51.8 |

unknown substance has melting point of 51.0 - 51.4

This overlaps A, B, + C

16.) Consider lowest mass of beaker + H_2O 154.0 g
 " highest mass of beaker + H_2O 154.6 g

Empty beaker lowest mass: 44.9 g

" " highest mass: 45.6 g

a) Greatest mass is $154.6 - 44.9 = 109.7 \text{ g}$

b) lowest mass is $154.0 - 45.6 = 108.4 \text{ g}$

c) 109.05 ± 0.65

$17) 3$

$18) 4$

$19) 4$

$20) 7$

$21) 1.5 \times 10^{27} \text{ m/s}$

$22) 1.07 \times 10^{-22} \text{ kg}\cdot\text{m}$

$23) 2.0 \times 10^5 \text{ kg}$

that's
a
two

$24) 2100 \text{ m}^2 \text{ or } 2.1 \times 10^3 \text{ m}^2$