

Scientific Notation

$$(10) (7.6 \times 10^{-11})(6.1 \times 10^9) = .4636 = \boxed{4.6 \times 10^{-7}}$$

$$(11) \frac{3.58 \times 10^{-12}}{6.0 \times 10^8} = 5.9667 \times 10^{-21} = \boxed{6.0 \times 10^{-21}}$$

$$(12) 8.9 \times 10^7 - 2.1 \times 10^5 = 88790000 = \boxed{8.9 \times 10^7}$$

$$(13) 3.29 \times 10^4 + 1.21 \times 10^5 = 153900 = \boxed{1.54 \times 10^5}$$

$$(14) (9.8 \times 10^{-34})(7 \times 10^{14}) = 6.86 \times 10^{-19} = \boxed{7 \times 10^{-19}}$$

$$(15) \frac{5.6 \times 10^8}{3.19 \times 10^{12}} = 1.75548 \times 10^{-4} = \boxed{1.8 \times 10^{-4}}$$

Sig Figs

$$(20) 4.5 \text{ m} \cdot 3.00 \text{ m} = 13.5 = \boxed{14 \text{ m}^2}$$

$$(21) \frac{8.700 \text{ cm}}{3.2 \text{ cm}} = 2.71875 = \boxed{2.7}$$

$$(22) 7.80 \text{ m} + 4 \text{ m} + 78.2 \text{ m} = \boxed{90 \text{ m}}$$

$$(23) .64 \text{ mm} - 4.3 \text{ mm} - .200 \text{ mm} = -3.86 = \boxed{-3.9 \text{ mm}} *$$

* yes, I know negative mm doesn't make any sense!

Conversions

$$(24) (x) \mu\text{g} = \frac{45.6 \text{ kg} \left| \frac{1000 \text{ g}}{1 \text{ kg}} \right| \frac{1 \mu\text{g}}{1 \times 10^{-6} \text{ g}}}{1} = \boxed{4.56 \times 10^{10} \mu\text{g}}$$

$$(25) (x) \text{ m} = \frac{1050 \text{ cm} \left| \frac{1 \text{ m}}{100 \text{ cm}} \right|}{1} = \boxed{10.5 \text{ m}}$$

$$(26) \frac{35.38 \text{ mL} \left| \frac{1 \text{ L}}{1000 \text{ mL}} \right|}{1} = \boxed{.03538 \text{ L}}$$

$$(27) (x) \text{ in} = \frac{4.5 \times 10^{-4} \text{ mi} \left| \frac{5280 \text{ ft}}{1 \text{ mi}} \right| \frac{12 \text{ in}}{1 \text{ ft}}}{1} = \frac{28.512}{1} = \boxed{29 \text{ in}}$$

$$(28) (x) \frac{\text{cm}}{\text{s}} = \frac{50 \text{ km} \left| \frac{1000 \text{ m}}{1 \text{ km}} \right| \frac{100 \text{ cm}}{1 \text{ m}} \left| \frac{1 \text{ hr}}{60 \text{ min}} \right| \frac{1 \text{ min}}{60 \text{ s}}}{1} = 1388 = \boxed{\frac{1000 \text{ cm}}{\text{s}}}$$

$$(29) (x) \frac{\text{m}}{\text{s}} = \frac{65 \text{ mi} \left| \frac{1.61 \text{ km}}{1 \text{ mi}} \right| \frac{1000 \text{ m}}{1 \text{ km}} \left| \frac{1 \text{ hr}}{60 \text{ min}} \right| \frac{1 \text{ min}}{60 \text{ s}}}{1} = 29.069 = \boxed{29 \frac{\text{m}}{\text{s}}}$$

$$(30) (x) \text{ min} = \frac{60 \text{ mi} \left| \frac{1 \text{ hr}}{45 \text{ mi}} \right| \frac{60 \text{ min}}{1 \text{ hr}}}{1} = \boxed{80 \text{ min}}$$

$$(31) (x) \text{ hr} = \frac{1.2 \times 10^5 \text{ km} \left| \frac{1000 \text{ m}}{1 \text{ km}} \right| \frac{1 \text{ s}}{3.0 \times 10^8 \text{ m}} \left| \frac{1 \text{ min}}{60 \text{ s}} \right| \frac{1 \text{ hr}}{60 \text{ min}}}{1} = \frac{1.111 \times 10^{-4}}{1} = \boxed{1.1 \times 10^{-4} \text{ hr}}$$

$$(32) (x) \text{ s} = \frac{1 \text{ century} \left| \frac{100 \text{ yrs}}{1 \text{ cent.}} \right| \frac{365 \text{ days}}{1 \text{ yr}} \left| \frac{24 \text{ hr}}{1 \text{ day}} \right| \frac{60 \text{ min}}{1 \text{ hr}} \left| \frac{60 \text{ s}}{1 \text{ min}} \right|}{1} = 3.153600000 = \boxed{3 \times 10^9 \text{ s}}$$

$$\textcircled{33} \quad (x) \text{ cm}^3 = \frac{1.08 \times 10^{12} \text{ km}^3}{\left(\frac{1000 \text{ m}}{1 \text{ km}}\right)^3} \left(\frac{100 \text{ cm}}{1 \text{ m}}\right)^3$$
$$= \boxed{1.08 \times 10^{27} \text{ cm}^3}$$

$$\textcircled{34} \quad (x) \text{ m}^3 = \frac{5300 \text{ cm}^3}{\left(\frac{1 \text{ m}}{100 \text{ cm}}\right)^3} = \boxed{5.3 \times 10^{-3} \text{ m}^3}$$

