

Today August 24 2018

Sections 1.6-1.8 Pg 11-15

Download Office 365. Go to office365 @ creighton.edu

Lab starts Tuesday

8/28 with quiz on syllabus, first + second prelab slides

Which of these are correct?

$$1 \text{ cm} = 1 \times 10^{-2} \text{ m}$$

$$1 \text{ g} = 1 \times 10^3 \text{ kg}$$

$$1 \times 10^3 \text{ m} = 1 \text{ km}$$

$$1 \times 10^3 \text{ m} = 1 \text{ km}$$

$$1 \text{ pm} = 1 \times 10^{-9}$$

$$1 \text{ L} = 1 \times 10^{-6} \text{ mL}$$

$$1 \times 10^{-9} \text{ ng} = 1 \text{ g}$$

$$1 \times 10^9 \text{ ng} = 1 \text{ g}$$

$$1 \text{ L} = 1 \times 10^3 \text{ mL}$$

$$1 \text{ ms} = 1 \times 10^{-6} \text{ s}$$

$$1 \text{ mg} = 1 \times 10^{-3} \text{ g}$$

Which of these is larger?

$$\frac{154 \text{ pm}}{1 \text{ pm}} \times 10^{-12} \text{ m} = 1.54 \times 10^{-10} \text{ m} \text{ or } 154 \text{ pm}$$

$$\frac{7.7 \times 10^{-9} \text{ cm}}{1 \text{ cm}} \times 10^{-2} \text{ m} = 7.7 \times 10^{-11} \text{ m}$$

Cat Insulin dosage = 7 mL/kg 1 lb = 454 g

What is the dosage for a 16 lb cat? in mL

$$\text{Dose} = \frac{7 \text{ mL insulin}}{\text{kg cat}} \times \frac{1 \text{ kg}}{1 \times 10^3 \text{ g}} \times \frac{454 \text{ g}}{1 \text{ lb}} \times \frac{16 \text{ lbs}}{1 \times 10^{-6} \text{ L}} = \frac{1 \text{ mL}}{1 \times 10^{-3} \text{ L}}$$

$$\frac{16 \text{ lbs}}{1 \text{ lb}} \times \frac{454 \text{ g}}{1 \text{ lb}} = 7264 \times \frac{1 \text{ mL}}{1 \times 10^{-3} \text{ L}}$$

$$= 5.0848 \times 10^{-2} \text{ mL}$$

$$\text{Dose} = (0.051 \text{ mL}) \times \left(\frac{40 \text{ units}}{0.5 \text{ mL}} \right) =$$

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$$1.916 \times 10^2$$

$$0.40 \text{ syringes} = 0.50 \text{ mL} = 40 \text{ units}$$

Dose	0.051 mL	40 units	=	4.1 units
		0.50 mL		

$$1 \text{ mL} = 1 \text{ cm}^3$$

$$\text{Volume}_{\text{box}} = l_1 \times l_2 \times l_3$$

$$\text{Volume}_{\text{cube}} = l^3$$

$$\text{Volume}_{\text{sphere}} = \frac{4}{3} \pi r^3$$

$$\begin{aligned} \text{Volume}_{\text{cylinder}} &= A_{\text{circle}} \times h \\ &= \pi r^2 \times h \end{aligned}$$

What is the mass of a gallon of water in lbs?

$$\text{Given Density} = 1.0 \text{ g/mL}$$

Gallon water \rightarrow quarts of H_2O \rightarrow L water \rightarrow mL water \rightarrow g H_2O \rightarrow lbs water

1 gallon	4 qts	3.785 L	3785 mL	3785 g	8.34 lbs
1 gallon		1.0567	1×10^{-3} L	1 mL	1.0 g
					454 g

$$= 8.34 \text{ lbs}$$

$$\text{Time} = \frac{1 \text{ hr}}{70 \text{ min}}$$

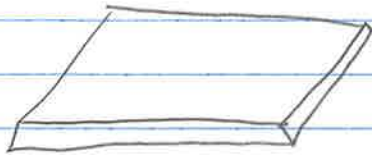
Aspirin density = 1.40 g/cm^3 , what is the volume of a 250mg tablet? density = $d = \frac{\text{mass}}{\text{volume}}$

$$\frac{250 \text{ mg}}{1 \text{ mg}} \times \frac{1 \times 10^{-3} \text{ g}}{1.40 \text{ g}} \times \frac{1 \text{ cm}^3}{1 \text{ mL}} \times \frac{1 \text{ mL}}{1 \text{ cm}^3}$$

~~$1.40 \times 10^{-5} \text{ L}$~~

$= 0.19 \text{ mL}$

Water for crop irrigation is measured in acre ft, where 1 acre ft = 1 acre of water, 1 ft deep.



$$640 \text{ acre} = 1 \text{ mi}^2$$

$$1 \text{ mi} = 5280 \text{ ft}$$

How many cubic feet in an acre ft.

$$\text{Volume} = \frac{1 \text{ acre} \cdot \text{ft}}{640 \text{ acre}} \times \frac{1 \text{ mi}^2}{1^2 \text{ mi}^2} \times \frac{5280^2 \text{ ft}^2}{1^2 \text{ mi}^2}$$

$$= 43560 \text{ ft}^3$$