

August 23rd

Monday 8/26 Finish ch. 1

Sections 1.7-1.8

Tuesday Lab: bring laptop

↳ Quiz @ 8am

* This weekend work with flashcards (next Friday, 8/30 nomenclature lecture)

* Get Microsoft Excel

Sunday 8/25 → Problem Club w/ Kendall

↳ Eppley III, 7:30-9pm

Which of these are correct?

✓ 1cm = 1 × 10⁻² m

✗ 1pm = 1 × 10⁻¹² m

✗ 1g = 1 × 10³ Kg

✗ 1L = 1 × 10⁻⁶ mL

✓ 1ks = 1 × 10³ s

✗ 1 × 10⁻⁹ ng = 1g

✓ 1 × 10⁹ ng = 1g

✓ 1L = 1 × 10⁶ mL

✓ 1mmol = 1 × 10⁻³ mol

✓ 1mg = 1 × 10⁻³ g

Which is larger? 154 pm or 7.7 × 10⁻⁹ cm

7.7 × 10⁻⁹ cm → pm

length = $\frac{7.7 \times 10^{-9} \text{ cm}}{1 \text{ cm}} \times \frac{1 \text{ pm}}{1 \times 10^{-12} \text{ m}} = 77 \text{ pm}$

convert 17 lb cat into Kg

given 454 g ≈ 1 pound

Insulin dosage for cat = 7 mL of insulin per Kg of cat

Mass = $\frac{17 \text{ lb}}{1 \text{ lb}} \times \frac{454 \text{ g}}{1 \times 10^3 \text{ g}} = 7.72 \text{ Kg}$

dose = $\frac{7.72 \text{ Kg}}{1 \text{ Kg cat}} \times 7 \text{ mL insulin} = 54 \text{ mL}$ "U40 syringes"
0.50 mL = 40 "units"

dose = $\frac{54 \text{ mL}}{1 \text{ mL}} \times \frac{1 \text{ mL}}{1 \times 10^{-3} \text{ L}} = 0.054 \text{ mL}$ 40 "units"

↳ 4.32 "units"

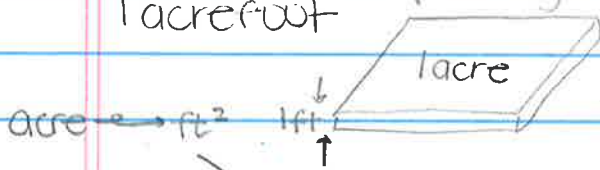
What is the weight in pounds of a gallon of water given the density of water is 1.0g/mL (or 1.0g/cm³)?

August 23rd

Volume (1 gallon) → quarts → L → mL → mass(g) → weight(lbs)
density

$$\text{weight} = \frac{1 \text{ gallon}}{1 \text{ gallon}} \cdot \frac{4 \text{ qts}}{1.06 \text{ qts}} \cdot \frac{1 \text{ L}}{1 \times 10^{-3} \text{ L}} \cdot \frac{1 \text{ mL}}{1 \text{ mL}} \cdot \frac{1 \text{ g}}{454 \text{ g}} \cdot \frac{1 \text{ lb}}{1 \text{ lb}} = \boxed{8.3 \text{ lbs}}$$

Water for crop irrigation is measured in acrefeet. 1 acrefoot



Given: 640 acres/mi², 1ft = 12in.
 How many ft³ are in an acreft?
1mi = 5,280ft, 1in. = 2.54cm

$$\text{vol} = \frac{1 \text{ acre}\cdot\text{ft}}{640 \text{ acres}} \cdot \frac{1 \text{ mi}^2}{1 \text{ mi}^2} \cdot \frac{5,280^2 \text{ ft}^2}{1 \text{ mi}^2} = \boxed{4.4 \times 10^4 \text{ ft}^3}$$