

Conversion Factors: $\mu = 10^{-6}$, $m = 10^{-3}$, $c = 10^{-2}$, $k = 10^3$.

1 kg = 2.205 pounds, 2.54 cm = 1 in, 12 inches = 1 ft.

SHOW ALL WORK TO RECEIVE CREDIT

1. (5 Pts) A certain medication calls for a dosage of 1.0 μL for each kilogram of body weight. If a patient weighs 158 pounds, how many μL of medication should his dosage contain?

$$\frac{158 \cancel{\text{lbs}}}{2.205 \cancel{\text{lbs}}} \times \frac{1 \cancel{\text{kg}}}{1 \cancel{\text{kg}}} \times \frac{1.0 \mu\text{L}}{1 \text{ kg}} = 71.7 = 72 \mu\text{L}$$

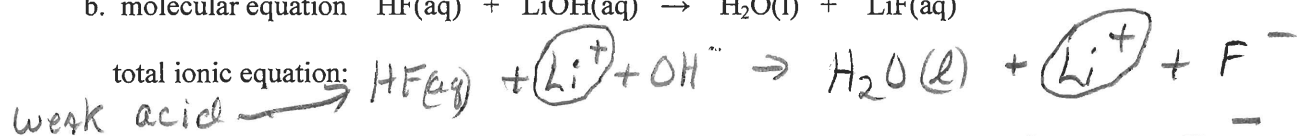
2. (9 Pts) Complete the following table.

Element or ION	number of protons	number of electrons	number of neutrons
$^{15}\text{N}^{3-}$	7	10	8
^{55}Fe	26	26	29
^{37}Cl	17	17	20

3. (3 Pts) State which element Mg or S is larger in size (volume) and then explain why.

Mg has a larger diameter. Each element has three "layers" of e^- s (3rd period), but Mg only has 12 protons holding the electrons, whereas S has 16 protons holding the electrons.

5. (8 Pts)



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1. (5 Pts) A certain medication calls for a dosage of 2.0 μL for each kilogram of body weight. If a patient weighs 143 pounds, how many μL of medication should her dosage contain?

$$\frac{143 \cancel{\text{lbs}}}{2.205 \cancel{\text{lbs}}} \times \frac{1 \cancel{\text{kg}}}{2.205 \cancel{\text{lbs}}} \times \frac{2.0 \mu\text{L}}{1 \cancel{\text{kg}}} = 129.7 = 130 \mu\text{L}$$

2. (9 Pts) Complete the following table.

Element or ION	number of protons	number of neutrons	number of electrons
$^{14}\text{N}^{3-}$	7	7	10
^{56}Fe	26	30	26
^{35}Cl	17	18	17

3. (3 Pts) State which element Na or P is larger in size (volume) and then explain why.

Na is larger (same period, but less protons pulling on the e^{-} 's)

5. (8 Pts)



total ionic equation:

see Quiz 3a

net ionic equation:



total ionic equation:

net ionic equation: