SI Worksheet

2/3/22

Agenda:

Worksheet

Spotify songs (put ideas on the board)

1. Conversion Questions
   1. Convert 6,789 ft to miles. 1 mi=5280 ft
   2. Convert 218.9 lbs to kilograms (kg). 1 kg=2.2 lbs
   3. Convert 40 inches (in) to nanometers (nm). 2.54 cm= 1 in
   4. A child is prescribed a dosage of 12 mg of a certain drug per day and is allowed to refill his prescription twice. If there are 60 tablets in a prescription, and each tablet has 4 mg, how many doses are in the 3 prescriptions (original + 2 refills)?
2. Density
   1. The solution in lab has a density of 11.3 g/mL. If the volume of the solution is 5.897 mL, what is the mass of the solution?
   2. A student found a rock. It was determined that the rock was coal. Since coal has a density of 1.4 g/cm3, and was weighed to be 3.77 grams, what is the volume of the piece of coal?
   3. A piece of wood that measures 3.1 cm by 6.98 cm by 4.7 cm has a mass of 82.30 grams. What is the density of the wood? Would the piece of wood float in water (d=1.00 g/mL)? V= LxWxH
   4. A little aluminum boat (mass of 14.50 g) has a [volume](javascript:def('/Glossary/glossaryterm.aspx?word=Volume%27,%20500,%20500);) of 450.00 cm3. The boat is place in a small pool of water and carefully filled with pennies. If each penny has a [mass](javascript:def('/Glossary/glossaryterm.aspx?word=Mass%27,%20500,%20500);) of 2.50 g, how many pennies can be added to the boat before it sinks? (Tricky, let me know if you have questions)
3. Significant Figures
   1. How many significant figures is in...

0.987? 0.980000? 0.5908? 1490.670?

* 1. 2.345 + 5.6 =? Write the answer with right amount of significant figures
  2. 5.098/ 1.94 =? Write the answer with right among of significant figures
  3. Write the answer with the right number of significant figures.
  4. (30.45-7.69 x 3.40)/ (5.349+9.857 x 6.45) =?? Write the answer with the right number of significant figures.

1. Precise or Accurate
   1. Susan conducts an experiment five times and gets a solution concentration of 1.9M, 2.1M, 1.8M, 1.9M, and 2.2M. The known concentration of the solution is 2.0M. Are Susan’s results accurate, precise or both?
   2. Martin is conducting an experiment. His first test gives him a yield of 5.2 grams. His second test gives him a yield of 1.3 grams. His third test gives him a yield of 8.5 grams. On average, his yield is 5.0 grams, which is close to the known yield of 5.1 grams of substance. Is this indicating precision, accuracy, or both?
   3. Jared is practicing for a golf tournament. His normal driver distance is 250 yards. He hits three balls with his driver, and they travel a distance of 190 yards, 195 yards, and 191 yards. Is this indicating precision, accuracy, or both?