ACTIVITY 12 MULTISTEP CONVERSIONS

1. Grumpy infants can be prescribed Flanoxin to cure incidents of crabbiness, irritability, etc. It is to be prescribed as 0.06 mg Flanoxin per 1 kg of body weight. How much Flanoxin should be given to a 6.5 lb baby? (1 kg = 2.2 lb.) Round your answer to the nearest hundredths place.

$$\frac{6.5 \text{ lbs.}}{1} \times \frac{1 \text{ kg}}{2.2 \text{ lbs.}} = 2.95 \text{ kg}$$

$$\begin{array}{r} 2.95 \text{ kg} \\ \times .06 \\ \hline .1770 \text{ mg} \end{array}$$

Answer: .18 mg

2. A deep sea salvage operator earns $1.00 per 3.5 ft of deep sea diving. He can also earn 12 bonus points for every $4.75 earned. How many bonus points will he earn on a 4000 foot dive? Round your answer to the nearest whole number.

$$\frac{\$\,1.00}{3.5 \text{ ft.}} = \frac{1142.86}{4000 \text{ ft.}} \qquad \frac{\$\,1142.86}{4.75} = 240.6 \qquad 12(240.6) = 2887.2 \text{ bonus points}$$

Answer: 2887 b.p.

3. A museum is shipping statues to another museum overseas. The shipping information is as follows: $605 per crate, $5 donated to charity for every $12 dollars spent in shipping costs, 3 statues per crate. How much money will be donated to charity if 24 statues are shipped? Round your answer to the nearest penny.

$$\frac{3 \text{ statues}}{1 \text{ crate}} = \frac{24 \text{ statues}}{x(8 \text{ crates})} \qquad \frac{\$605}{1 \text{ crate}} = \frac{x(4840)}{8 \text{ crates}} \qquad \frac{5 \text{ donate}}{12 \text{ spent}} = \frac{x(2016.67)}{\$4840 \text{ spent}}$$

Answer: $ 2016.67

4. Sam the Scientist has designed a rocket to use for travelling. It costs 4 million dollars for every 2 tons launched. In order to travel 80 miles, the rocket uses 3.5 pounds of fuel. If the rocket weighs 1000 pounds without any fuel, how much will it cost Sam to use his rocket to travel a distance of 560 miles? (Round your answer to the nearest tenth.)

$$\frac{\$4,000,000}{4000 \text{ lbs}} = \$1000/\text{lbs launched} \qquad \frac{x(24.5)}{560 \text{ miles}} = \frac{3.5 \text{ lbs}}{80 \text{ miles}} \qquad 24.5 \text{ lbs} \left(\frac{1000}{\text{lbs}}\right)$$

Answer: $ 24,500

5. A spaceship captain is interested in exploring the galaxy and needs to hire a crew. The intergalactic employment agency had the following sign posted in their office: 8 Newtonians for 1 dollar, 3 Hypatians for 6 Pythagoreans, 12 Pythagoreans for 2 Euclideans, 4 Newtonians for 6 Euclideans. How many Hypatians can be hired for $200 as a crew for the spaceship?

$$\frac{\$1}{8\ \text{N}} \times \frac{4\ \text{N}}{6\ \text{E}} \times \frac{2\ \text{E}}{12\ \text{P}} \times \frac{6\ \text{P}}{3\ \text{H}} = \frac{\$1}{36\ \text{H}} = \frac{\$200}{7200\ \text{H}}$$

Answer: **7200 Hyp.**

6. The owner of a shipwreck salvage company is trying to decide if he should attempt to salvage a shipwreck that he can later sell for $200,000. The wreck is 800 miles away. He figures 3 days of actual salvage work. He has hired you as a consultant to help him determine the fees associated with this operation. He wants you to submit the following spreadsheet to assist his decision.

Fee Description	Fee Rates	Total Fees
Boat Charter Fees	Charter fee $1100/hr Speed 25 mi/hr	
Diving Fees	Descent $10/12 ft. Ascent $8/12 ft.	
Diver Salvage Fees	Underwater Salvage work $150/hr.	**10,800**
	Grand Total:	**127,180**

Note: Before just diving in to solve this or any problem, you should think about the information you've been given, as well as the information you need to solve the problem. There are questions you might need to ask yourself. Here is an example of one such question:

- How much profit would the owner want to make on the salvage operation? Should the total costs incurred be less than $180K so he can make a $20K profit? Or is he just wanting to "break even?"

What other questions should you ask? What assumptions must you make in order to solve the problem with the information as given? What information must be given so that you can solve the problem without making *any* assumptions?

Sample questions might include:

Do they work 24 hrs / day?

How far down is the wreck?

ex. 1320 ft.