Hw???

$$1L\ H_2O = 1kg$$

4. Krystina is stacking flats of 355 mL bottles of water on a shelf. If there are 24 bottles in a flat, how much will 12 flats weigh? Ignore the weight of the plastic bottles and the cardboard flat.

   a) in kilograms?

   b) in pounds?

a)

$$355 \times 24 \times 12 = 102240\ mL$$

$$102240\ mL \times \frac{1\ L}{1000\ mL} = 102.24\ kg$$

b) $102.24\ kg \times \dfrac{2.2\ lbs}{1\ kg} = 224.928\ lbs$

3. Hong is a building contractor. The building code in his area requires that roofs be built to withstand 30 pounds of weight per square foot of horizontal area.

   a) How many kilograms per square metre is this?

   b) After a snowfall, a square foot of flat roof covered with snow has a weight of 18.1 pounds pressing on it. If the flat area of the roof of a house is 1700 square feet, what is the weight of the snow on the roof:

      i) in pounds?   ii) in kilograms?

$30 lbs / ft^2$

a) $\dfrac{30 lbs}{1 ft^2} \times \dfrac{1 \; kg}{2.2 \; lbs} \times \dfrac{3.2808 \; ft^2}{1 \; m^2} = \boxed{146.8 \; kg/m^2}$

b) $18.1 \; lbs / ft^2$

$\dfrac{18.1 \; lbs}{1 ft^2} \times 1700 \; ft^2$

i) $\boxed{30770 \; lbs} \times \dfrac{1 \; kg}{2.2 \; lbs}$

$= \boxed{13986.4 \; kg}$

EXAMPLE #2

Alphonse is making chicken kebabs for 14 people. His recipe suggests about 7 oz of chicken per person. At the grocery store, the weight of the chicken is labelled in kilograms. How much chicken does Alphonse need to buy?

Remember: 1 kg = 2.2 lbs
1 oz = 28.4 g

$$Total = 14 \times 7$$
$$= 98 \; oz \times \frac{28.4 \, g}{1 \, oz} \times \frac{1 \, kg}{1000 \, g} = 2.78 \, kg$$

2.8 kg

EXAMPLE #3:

A crane can lift a maximum of 5 t. Sandstone weighs about 150 lb per cubic foot, and a container contains 70 cubic feet of sandstone. Can the crane be used to load the container onto a train?

$$\text{TOTAL} = \frac{150 \text{ lbs}}{ft^3} \times \frac{70 \text{ ft}^3}{}$$

Yes

$$= 10500 \text{ lbs} \times \frac{1 \text{ kg}}{2.2 \text{ lbs}} \times \frac{1 \text{ t}}{1000 \text{ kg}}$$

$$= 4.77 t$$

4.8 t so yes

Homework: 5.4 - Practice Problems.doc

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Attachments

5.4 - Practice Problems.doc