

Name: _____

Block: _____

Date: _____

A+W Math 10

Ch. 4.2 - Weight in the Imperial System

Notes

Another important measurement to be able to work with is weight. In the imperial system there are 3 major units of measurement: ton (tn), pound (lb), and ounce (oz)

On the formula sheet:

$$1 \text{ kilogram (kg)} = 2.2 \text{ pounds (lbs)}$$

Others to know:

$$1 \text{ ton (tn)} = 2000 \text{ pounds (lb)}$$

$$1 \text{ pound (lb)} = 16 \text{ ounces (oz)}$$

Ex. 1) You need 1 pound 2 ounces of Gruyère cheese, 12 ounces of cheddar cheese, and 11 ounces of Swiss cheese for a fondue recipe. How many pounds of cheese do you need in all?

$$1 \text{ pound } 2 \text{ ounces} = 16 \text{ ounces} + 2 \text{ ounces} = 18 \text{ ounces} \quad \text{Convert to oz.}$$

$$\begin{array}{r} 18 \text{ ounces} \\ +12 \text{ ounces} \\ +11 \text{ ounces} \\ \hline 41 \text{ ounces} \end{array}$$

Add the amounts

$$41 \text{ ounces} \times \frac{1 \text{ pound}}{16 \text{ ounces}} = \frac{41}{16} = 2 \frac{9}{16} = 2 \text{ pounds } 9 \text{ ounces}$$

You need 2 lbs 9 oz of cheese for the recipe.

Ex. 2) The cab of your semi-trailer truck weighs 8.7 tons and the trailer weighs 6.4 tons. If the loaded gross weight of the truck is 21.3 tons, what is the weight of the load?

a) in tons?

$$\text{Total weight} = \text{truck} + \text{trailer} + \text{load}$$

$$\text{Load} = \text{Total weight} - \text{truck} - \text{trailer}$$

$$\text{Load} = 21.3 \text{ tn} - 8.7 \text{ tn} - 6.4 \text{ tn}$$

$$\text{Load} = 6.2 \text{ tn}$$

The weight of the load is 6.2 tn.

b) in pounds?

$$6.2 \text{ tn} \times \frac{2000 \text{ lbs}}{1 \text{ tn}} = 12400 \text{ lbs}$$

The weight of the load is 12400 pounds.

Ex. 3) A 12-ounce can of vegetables costs \$1.49. A 1 lb 2-oz can of the same vegetables costs \$2.19. Which is the better buy?

The values need to be in the same units to compare them...so convert them to \$/oz.

12 oz can

$$\frac{\$1.49}{12 \text{ oz}} = \$0.1242/\text{oz}$$

1 lb 2 oz can

$$1 \text{ lb } 2 \text{ oz} = 16\text{oz} + 2 \text{ oz} = 18 \text{ oz}$$

$$\frac{\$2.19}{18 \text{ oz}} = \$0.1217/\text{oz}$$

The 1 lb 2 oz can of vegetables is a better buy.

Ex. 4) Valérie bought 4 pounds 6 ounces of steak for dinner at \$2.74/lb. After removing the excess fat, she had only 4 pounds of meat. What was her true cost per pound?

$$4 \text{ lb } 6 \text{ oz} = 4 \frac{6}{16} = 4.375 \text{ lbs}$$

Change the ounces to a decimal in pounds

$$4.375 \text{ lb} \times \frac{\$2.74}{1 \text{ lb}} = \$11.99$$

Find the total cost of the meat

$$\frac{\$11.99}{4 \text{ lbs}} = \$2.9975/\text{lb} = \$3.00/\text{lb}$$

Divide the cost by the pounds of trimmed meat.

The true cost for the meat was \$3.00/lb.

Assignment: Ch. 4.2 – Practice Your New Skills