WARM-UP: Convert the following...

1 oz = 28.4 g
1 kg = 2.2 lbs
1 t = 1.1 tn

a) 56 g = 1.97 oz

$56\text{ g} \times \frac{1\text{ oz}}{28.4\text{ g}}$

b) 120 lbs = 54.55 kg

$120\text{ lbs} \times \frac{1\text{ kg}}{2.2\text{ lbs}}$

c) 34 oz = 965.6 g

$34\text{ oz} \times \frac{28.4\text{ g}}{1\text{ oz}}$

SOLUTIONS...

Name : _____ Score : _____

Teacher : _____ Date : _____

Converting English and Metric

1)	16.53	pounds	=	7.5	kilograms
2)	0.63	ounces	=	18	grams
3)	13.5	pounds	=	6.12	kilograms
4)	15	ounces	=	425.24	grams
5)	35.27	pounds	=	16	kilograms
6)	12.5	pounds	=	5.67	kilograms
7)	8	ounces	=	226.8	grams
8)	0.51	ounces	=	14.5	grams
9)	8.82	pounds	=	4	kilograms
10)	0.65	ounces	=	18.5	grams
11)	47.4	pounds	=	21.5	kilograms
12)	2.5	ounces	=	70.87	grams
13)	0.34	ounces	=	9.5	grams
14)	0.69	ounces	=	19.5	grams
15)	20	pounds	=	9.07	kilograms
16)	17	pounds	=	7.71	kilograms
17)	6.5	pounds	=	2.95	kilograms
18)	15.43	pounds	=	7	kilograms
19)	8.5	ounces	=	240.97	grams
20)	22	ounces	=	623.69	grams

Geometry, Measurement & Finance 10 Math-Aids.Com

NEED ANSWERS???

Section 5.3 Detailed Solutions.pdf

Making Conversions

During class today you will learn how to convert a unit of volume to a unit of weight.

MATH *ON THE JOB*

Aislin's family owns and operates an organic farm in Kinkora, Prince Edward Island. The farm has been in the family for four generations; it was Aislin's great-grandfather who first started growing potatoes on the farm in 1890.

Aislin grew up on the farm and always knew she wanted to continue on in the family business. After high school, she attended Nova Scotia Agricultural College (NSAC), just outside Truro, Nova Scotia, where she earned a diploma in agricultural business. She returned home to the family farm in 1999 and started thinking about the opportunities in organic farming. She took distance courses through NSAC to earn a Certificate of Specialization in Organic Agriculture, and started working towards organic certification for the farm. The farm's crops are all now certified organic.

A customer is purchasing barley from the farm to feed to his organic cattle. The barley costs $3.59 per bushel. One tonne of barley contains 45.9 bushels. The barley was loaded directly into a truck that weighed 5550 kg when empty. When loaded, the truck weighed 12 100 kg.

a) How many bushels of barley were loaded into the truck?

b) How much will Aislin charge the customer for the barley?

12 100 − 5550 = 6550 kg

Aislin's family grows organic barley, oats, soybeans, and wheat.

Bushel: - is a measurement of **volume (equal to about 2220 in³)**
- abbreviated as '**bu**'

Question a) Note the conversion factor for converting bushels of barley to metric tonnes is 45.9. Also, be aware of the difference in weight between a loaded truck and an empty truck.

$6550\ \text{kg} \times \frac{1\ \text{t}}{1000\ \text{kg}} \times \frac{45.9\ \text{bu}}{1\ \text{t}} = 300\ \text{bu}$

Question b) Use your answer from (a) to determine the correct price.

$300 \times 3.59 = \$1079.32$

Math on the Job Solution

a) Calculate the weight of the barley

12,100 kg - 5,500 kg = 6,550 kg

Convert kg to tonnes

6550 kg / 1000 kg/t = 6.55 t

Convert tonnes to bushels

6.55 t X 45.9 bu/t = 300.65 bu (rounded off)

About 301 bushels were loaded onto the truck.

b) 300.65 bu X $3.59/bu = $1079.33

One More Example...

How many bushels (bu) of flax seed are there in 2.4 tonnes, if the conversion factor is 39.368 bushels/tonne?

$$2.4\,t \times \frac{39.368\,bu}{1\,t} = 94\,bu$$

Solution:

2.4 t X 39.368 bu/t = 94.5 bu

Try this one!

Laila bought 5 bushels of sunflower seeds. If the conversion is 73.487 bu/t, what is the weight of sunflower seeds:

a) in kilograms?
b) in pounds?

Remember: 1000 kg = 1 t
1 kg = 2.2 lbs

a) $5\ bu \times \frac{1\ t}{73.487\ bu} \times \frac{1000\ kg}{1\ t} = 68\ kg$

b) $68\ kg \times \frac{2.2\ lbs}{1\ kg} = 150\ lbs$

a) 67.9 kg
b) 149 lbs

What does a conversion factor tell you???

EXAMPLE #1...

The conversion factor for white beans is 36.744 bu/t, and for corn it is 39.368 bu/t. Which weighs more per unit volume?

1t / 36.744 bu

1t / 39.368 bu

Heavier

```
36.744⁻¹
      .0272153277
39.368⁻¹
      .0254013412
```

White Beans

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

$$98\text{ oz} \times \frac{1\text{ lbs}}{16\text{ oz}} \times \frac{1\text{ kg}}{2.2\text{ lbs}} = 2.8\text{ kg}$$ 2.8 kg

EXAMPLE #3:

tonne

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?

$$\frac{150\ lb}{ft^3} \times 70\ ft^3 = 10500\ lbs.$$

$$10500\ lbs \times \frac{1\ kg}{2.2\ lbs} \times \frac{1\ t}{1000\ kg} = 4.77\ t$$

4.8 t so yes

EXAMPLE #4:

Josephine is sending a gift of a bottle of maple syrup that weighs 3 lb, and 3 packages of smoked salmon that each weigh 100 g. If the package's total weight is less than 2 kg, she can ship it at a cheaper rate. Will she be able to do so?

$3\text{ lb} \times \frac{1\text{ kg}}{2.2\text{ lb}} = 1.36\text{ kg}$

$300\text{ g} \times \frac{1\text{ kg}}{1000\text{ g}} = 0.3\text{ kg}$

$+$

1.7 kg

1.7 kg so yes

Homework: 5.4 - Making Conversions.pdf

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Note: #4... 1 L of water = 1 kg

Attachments

5.4 - Making Conversions.pdf

Section 5.3 Detailed Solutions.pdf