

Using Unit Rates to Solve Proportion Problems | Date: _____

Last week we solved proportion problems, by setting up a proportion, and then looking for relationships within the proportion. For example, let's solve the following proportions in that way.

a) $\frac{3}{2} = \frac{x}{4}$

b) $\frac{9}{3} = \frac{x}{5}$

c) $\frac{x}{13} = \frac{12}{5}$

When solving real life application problems, we would set up a proportion like above, and solve it. For example. Marla makes \$22 every 2 hours. How much will she make in a work week of 35 hours? Solve using a proportion.

Is there another way to solve these problems? Yes! Let's see how we can use **unit rates**...

a) How much does Marla make for 1 hour of work?

b) Use your answer in a) to find how much she will make in 35 hours.

How about the next example from a grocery store....

Sam paid \$4.60 for 2.3 kg of white flour during her grocery shopping last week. This week, she is purchasing supplies for a large bake sale. She is going to need 12 kg of white flour. How much will it cost?

Unit Rate = _____

Answer = _____

∴ _____

Now try and solve the following problems by yourself. Please remember to show 3 complete steps.

- Finding the **unit rate**.
- Using the unit rate to solve the problem.
- Write a closing statement.

1. If there are 280 calories in a 5 ounce chicken breast, how many calories are in a 7 ounce chicken breast?

Unit Rate = _____

Answer = _____

∴ _____

2. Mrs. Taylor paid \$540 for 135 pieces of sod to cover her lawn. Her neighbour has a lawn that will need 160 pieces of sod to cover. How much will this job cost?

3. A bodybuilder put on 12 lbs of lean muscle mass in the past 5 weeks. Assuming he continues at this pace, how many pounds will he put on in 12 weeks?

Be careful with the next 2 questions...

4. A machine can bind 1000 books in 8 minutes. How many books can the machine bind in 1 hour?

5. If 2 cubic feet of soil weigh 32 pounds, how much do 11 cubic feet of soil weigh?