Name_____ Date _____

Mr. Tallman

Evaluate the following:

1) $\dfrac{\frac{1}{3}}{3}$

2) $\dfrac{\frac{2}{5}}{\frac{1}{4}}$

3) A crew of highway workers paved $\frac{2}{15}$ of a mile in 20 minutes. What is their work rate in miles per minute?

4) Solve algebraically: 6x = 294

Lesson #24 – Solving Proportions

A **proportion** is an equation that shows that two ratios are _____.

Ex: $\dfrac{1}{2} = \dfrac{5}{10}$

To solve a proportion, you can use **cross multiplication** to solve for the unknown quantity. To use cross multiplication, multiply the numerator of one ration with the denominator of the other.

Example 1) Solve the following proportions:

a) $\dfrac{8}{12} = \dfrac{6}{x}$

b) $\dfrac{0.4}{y} = \dfrac{3.4}{10.2}$

Try it! Solve the following proportions

2) $\dfrac{72}{90} = \dfrac{x}{25}$	3) $\dfrac{2.1}{y} = \dfrac{1.5}{1.4}$

Example 4) Derek counted 24 marshmallows in 3 servings of Marshy Morsels. At this rate, how many marshmallows are in 12 servings?

Steps:

1) Create a word ratio	2) Write a proportion	3) Solve

Example 5) A train travels 120 miles in 1.5 hours. At this rate, how many miles can it travel in 5 hours?

Try it!

6) A computer downloads a 48 kilobyte file in 5 seconds. At this rate, how long will it take the computer to download a file that is 120 kilobytes?

Now, You Try!

Solve the following proportions. Round to the nearest hundredth if necessary.

7) $\dfrac{6}{2} = \dfrac{4}{p}$	8) $\dfrac{4}{k} = \dfrac{8}{2}$	9) $\dfrac{n}{4} = \dfrac{8}{7}$
10) $\dfrac{7.7}{3.6} = \dfrac{2.3}{b}$	11) $\dfrac{6.3}{x} = \dfrac{2.56}{9.3}$	12) $\dfrac{v}{4.9} = \dfrac{5.4}{6.1}$

13) At Stop-N-Shop, two cans of pineapple chunks cost $4. How many cans of pineapple chunks can you buy for $18?

14) Molly bought two heads of cabbage for $1.80. How many heads of cabbage can she buy if she has $28.80?

16) Sean took a trip to Mexico. Upon leaving, he decided to convert all of his Pesos back into US Dollars. How many US dollars did he receive if he exchanged 42.7 Pesos at a rate of $5.30 = 11.1 Pesos?