NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ SCORE:\_\_\_\_\_\_\_\_\_

**1a. A ratio is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**There are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to write a ratio.**

**Example 1**. John could run a mile in 25 minutes

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Example 2**. Two pounds of grapes cost $4.45

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Example 3**. In a math class there are 5 boys and 7 girls.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Practice 1**: A can of soda cost 75 cents.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Practice 2:** There are 2 yellow beans for every 5 red beans.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Practice 3:** Three feet is equal to one yard.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Blowing bubble Contest**

***2. Bubble Gum Blowing:* Assign a counter, a timer, a blower, and a recorder. Blow as many bubbles as possible in one minutes.**

**2a.** Write a ratio comparing the number of bubbles and the number of seconds in one minutes.

**2b.** Find your blower’s rate of bubbles per second. Then, find the rates for the other teams in the class.

**2c.** Explain how you know which team won by using their rate per second rather than their total number of bubbles.

**2d.** About how many bubbles would you expect to have blown if the contest had continued for 10 minutes? Explain how you decided that number.

**3a**. **Proportion \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Cross product**

**Example 4.** If a turtle travels 5 inches every 10 seconds, how far will it travel in 50 seconds?

**Example 5**. David read 40 pages of a book in 5 minutes. How many pages will he read in 80 minutes if he reads at a constant rate?

**Example 6.** On a map, one inch represents 150 miles. If Las Vegas and Reno are five inches apart on the map, what is the actual distance between them?

**Example 7.** Ricaldo work as a landscaper and earn $13.75 per hour. How many hours Ricaldo worked if he earned $576 last week.

**Practice 4.**  If there were 7 males for every 12 females at the dance, how many females were there if there were 21 males at the dance?

Ask yourself is there a ratio, a comparison in that problem? What’s being compared?

**Practice 5.** Bob had 21 problems correct on a math test that had a total of 25 questions, what percent grade did he earn? (In other words, how many questions would we expect him to get correct if there were 100 questions on the test?)

**Practice 6.** If there should be three calculators for every 4 students in an elementary school, how many calculators should be in a classroom that has 44 students? If a new school is scheduled to open with 600 students, how many calculators should be ordered?

**Practice 7**. If your car can go 350 miles on 20 gallons of gas, at that rate, how much gas would you have to purchase to take a cross-country trip that was 3000 miles long?

**Estimating beans activity:**

**You have two kinds of beans Type A and Type B, and a large container. Your goal is to estimate the number of type A beans contained in a cup using ratios and proportions.**

Type A: \_\_\_\_\_\_\_\_\_\_\_\_\_(population) Type B:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(sample)

**Step 1.** Take the entire cup of type A beans (population) and place that in a large container.

**Step 2.** Take a small sample of type B beans and count the number of beans in your sample

Number of type B beans in your sample:\_\_\_\_\_\_\_\_\_\_

**Step 3.** Mix the sample of type B beans into the large container that contains type A beans (population). **Make sure the beans are mixed evenly.**

**Step 4.** Take a sample from the container that contains a mixture of both kinds of beans.

Count the number of each type beans in your sample.

Number of type B beans in your sample:\_\_\_\_\_\_\_\_\_\_\_\_\_

Number of type A beans in your sample:\_\_\_\_\_\_\_\_\_\_\_\_\_

**Step 5.** Using your sample in step 4 find the ratio of type A beans to type B beans.

**Step 6.** Set up and solve proportion to estimate the type A beans (population) in large container.

**Step 7.** Using ratios and proportions, I estimate that there are \_\_\_\_\_\_\_\_\_\_\_\_\_\_ type A Beans.

**EXIT SLIP NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Score: \_\_\_\_\_\_\_\_\_\_\_\_\_**

1. List two things you learned from this lesson related to ratio or proportion.

a.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_b.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. List one question you still have or one thing you want to learn about as a result of this lesson.

a.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. If James LeBron could make 15 three point shot in 9 minutes then how many three point shot can he make in half an hour? *Hint: how many minutes are in half an hour?*

1. (Bonus) You have a recipe for backing a cake that will serve 8 people. The recipe require that you use the following ingredient:

1 egg 2 cups of flour 1 cup of sugar 3 large strawberries 1 table of baking soda

Use ratio and proportion to figure out the amount of ingredient you will need to bake a cake for 12 people.