Name _____ Date _____/_____/_____

Algebra 1 Mr. Towne

Sections 2.1 to 2.3 Review

1) Write a fraction with a value less than one and a fraction with a value greater than one.

2) If the numerator (top) of a fraction is greater than the denominator (bottom), then what is true about the value of the number?

3) Change $\frac{4}{5}$ to a decimal.

4) Change $\frac{5}{4}$ to a decimal.

5) Bucky Hill got 14 out of 17 questions correct on Ms. Meanie's test. What is the ratio of:

   a. Questions correct to questions incorrect?

   b. Questions incorrect to the total number of questions?

   c. Setup a <u>proportion</u> that would be used to solve for the percentage that Bucky should get on his test. Please remember that *per cent* really means *out of 100*. Then solve the proportion to find the percentage grade Bucky will get.

6) Solve the following proportions

   a. $\frac{a}{13} = \frac{42}{91}$

   b. $\frac{2.1}{5.3} = \frac{451}{b}$

7) Mr. Towne can eat 21 Goldfish in 47 seconds.

   a. Find the rate of Goldfish per second.

   b. Find the rate of seconds per Goldfish

   c. A bag of Goldfish has approximately 330 fish. How long would it take Mr. Towne to eat them? Include units.

   d. Change your answer in part "c" to the number of days to eat 330 fish.

8) Mr. Towne's Ford Focus travels 312 miles on 12 gallons of gasoline.
   a. How many miles per gallon does Mr. Towne's car get?

   b. When he travels 1,191 miles to his hometown in New York, how many gallons of gas will he use?

9) An environmental group decides to estimate the number of deer in a forest. It captures 100 deer, tags them, and then sets them free back into the forest. The group comes back to the forest in six months and captures a sample of 250 deer. Of those, 23 were tagged by them earlier.

   a. Write a proportion that will be used to find the total number of deer in the forest.

   b. Solve your proportion. Write your answer along with the units.

   c. Your answer is an *estimate*. But the math used is *exact* – we know *exactly* how many deer were tagged, *exactly* how many were caught, and *exactly* how many of the deer caught the second time were tagged. Explain why your work can only be an estimate.

10) Four students are using the capture-recapture method to estimate the number of fish in an experimental pond. Their professor marked 150 fish from the pond, and then asked each student to net a sample of fish. Their results are shown in the table at the right. Which student will report the largest estimate for the population?[1]

| Student | Captured | Marked |
|---|---|---|
| **A** | 180 | 30 |
| B | 160 | 20 |
| **C** | 205 | 38 |
| **D** | 110 | 16 |

11) For the following problems, solve using dimensional analysis. Show each fraction multiplied together and what units "cancel out"
   a. How many seconds are in 2.0 years?

   b. A cheetah can run 55 miles per hour for short distances. How fast is that in feet per second?

[1] http://www.figurethis.org/pdf/ch/challenges_49-52.pdf