**Practice New Skills: Writing and Using Expressions**

1. One of the questions related to the theme of the course was, "Given current rates of population growth, how long would it take for there to be one person for each square meter of land on the earth?" So far, you have calculated the land area of the earth in square meters (in the Day 4 Activity). We are still a long way from being able to answer the question, but we can start exploring the effects of population growth.

    a. Namibia, Nicaragua, Haiti, Bolivia and Laos all have annual growth rates of approximately 2.1%. In 2009, the population of Nicaragua was 5.7 million. Given the rate of growth, what was the population in 2010?

    b. Write an expression that could be used to calculate the new population after one year for any country with a growth rate of 2.1%. Use p to represent the initial population in millions.

2. Approximately $\frac{1}{5}$ of the world's population is Muslim and $\frac{1}{3}$ is Christian.

    a. Calculate the number of Muslims if the world population is 6,810,000,000.

    b. Write a general expression to represent the number of Muslims in the world using the variable P for population in millions.

    c. Write an expression to represent the number of Christians in the world using the variable P for population in millions.

    d. Write an expression *in simplest form* to represent the total of Muslims and Christians in the world.

3. A square patio with length L feet is surrounded by 1 ft x 1 ft tiles. An example of a patio in with $L = 3$ is shown below. Write an expression for the number of tiles needed for any length of side. [Hint: You may want to make other examples for yourself.]

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 _ _ _ _ _
|_|_|_|_|_|
|_|     |_|
|_|  L  |_|
|_|   L |_|
|_|     |_|
|_|_|_|_|_|
```
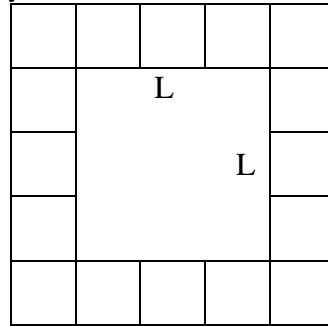
The rest of this assignment uses the online textbook.
4. Go to the Chapter Contents. Scroll down to the bottom of the page to the Searchable Index. Search for "exponents" to find the page number for the "power rule". Enter the page number in the box at the top of the page and press Enter. You should go to the page with the Power Rule. Do the Practice 1 problems on this page:

5. Return to the Searchable Index by selecting the Contents button at the top left of the page. Look up division of fractions. [Hint: Look up fractions and then look for division.] Do Practice 13 from this section:

Do the following exercises from the textbook: Section 5.4, p. 448-450: #31, 32, 38, 39, 61-62. Remember to check your work on odd-numbered problems and on the Practice problems above.

Assignment is continued on next page.

Answer the following questions using the Self-Assessment Reading.

6. The table below lists the Foundational Skills that you are expected to know and which will be included on your first exam. Check the box that describes your understanding for each skill.

	Can perform skill accurately and consistently. Understand the concepts and meaning of steps.	Work is inconsistent with frequent errors. Vaguely understand concepts and steps.	Cannot perform this skill. Do not understand concepts.
Convert between mixed and improper fractions			
Simplify or reduce fractions			
Add/Subtract Fractions			
Multiply Fractions			
Divide Fractions			
Convert fractions/decimals/ percents			
Calculate a % of a number (34% of 27)			
Calculate what % one number is of another (20 is what % of 67)			
Calculate the number another number is a percentage of (15 is 32% of what number)			
Combine like terms			
Use the Distributive property			
Solve a 2-step equation ($2x - 4 = 8$)			
Add negative/positive numbers			
Subtract negative/positive numbers			
Multiply/Divide negative/positive numbers			
Use the order of operations			

7. Give at least two examples of specific evidence you are using in your self-assessment. Examples of evidence could include specific homework assignments, review work you have done, etc.

8. Describe what you will do to address any skills which you have not mastered (first column) before the exam.

9. Write a response to **one** of the prompts listed below…
   - Describe a way in which you have "copped-out" about assessing your understanding in a math class.
   - Describe a way in which you used self-assessment to help you learn in a math class.
   - Describe a common error you know you make in math and explain a strategy you can use to correct this error.