ARE YOU PREPARED?

✓ This mini quiz is meant to serve only as an indicator of a few of the math skills that you are expected to know at the beginning of this course. Do not use these problems as a study guide thinking that they will adequately prepare you for the course.

✓ These example problems are merely representative of some of the most important concepts that are taught in the prerequisite courses.

✓ The course will offer little or no time for any type of review; it assumes that you are prepared to do the work the first day of class.
Below are some of the major topics that are covered in Math 211, Math 212, and Math 213

FOUNDATIONS OF ELEMENTARY MATHEMATICS SERIES

1. **Topics for Math 211:**
   
   A. Problem solving
   B. Set Theory – union, intersection, complement, Venn Diagrams
   C. Historic Numeration Systems
   D. Whole Number Operations – properties, algorithms, models, non-decimal bases.
   E. Number Theory – divisibility, primes, GCD, LCM, modular arithmetic.

2. **Topics for Math 212:**
   
   A. Fractions, Decimals, Percents – operations, models, algorithms, problem solving.
   B. Real Number System
   C. Probability – modeling, multistage experiments, methods of counting.
   D. Introductory Statistics – data, graphs, averages

3. **Topics for Math 213:**
   
   A. Introductory Geometry – curves, angles, congruence, constructions, 3-dimensional.
   B. Transformational Geometry – translation, rotation, reflection, tessellations
   C. Measurement Concepts – length, area, volume
   D. Metric System – meter, gram, liter, Celsius

To be successful studying the topics covered in this course, students should be appropriately prepared by: #1 Taking the prerequisite math course within the last three years with a passing grade of A or B, or within the last one year with a passing grade of C, or #2 placing into the course by the ASSET placement test.
Below is a sample of some skills you should have **BEFORE** entering MATH 211

You **MAY** use a calculator

1. The temperature at 10:00 pm in West Yellowstone was 5 degrees below zero. By 3:00 am the temperature had dropped 8 degrees. What was the temperature at 3:00 am?
   a) $-3^\circ$  b) $3^\circ$  c) $12^\circ$  d) $-13^\circ$  e) $13^\circ$

2. What is the equation of a line with slope $-\frac{1}{2}$ which passes through the point $(6, -4)$?
   a) $6x + 4y = -\frac{1}{2}$  b) $y = -\frac{1}{2}x - 1$  c) $2x - 4y = 2$  c) $y = 6x - \frac{1}{2}$

3. A roast is to be cooked 20 minutes per pound. If the roast weighs 6 pounds and the cook wants it to finish cooking by 5:30 pm, what is the latest time he can begin cooking the roast?
   a) 11:30 am  b) 2:30 pm  c) 3:30 pm  d) 4:00 pm  e) 4:10 pm

4. If $x + 2y = 6$, then $2x + 4y = ?$
   a) 6  b) 8  c) 9  d) 10  e) 12

5. Les saved $8 on the purchase of a tire whose regular price was $40. What percent of the regular price did he save?
   a) 5%  b) 8%  c) 12%  d) 20%  e) 32%

6. The acceleration $A$ that results when force $F$ is applied to a body of mass $M$ can be calculated from the formula $F = MA$. What is the value of $A$ if $M = 1200$ and $F = 90,000$?
   a) 75  b) 750  c) 7500  d) 1,080,000  e) 108,000,000

7. If $\frac{4}{x} = 8$, then $x - 1 = ?$
   a) $-1\frac{1}{2}$  b) $-\frac{2}{3}$  c) $-\frac{1}{2}$  d) $\frac{1}{2}$  e) 1

8. Consider the problem: “Frank’s average speed riding a bicycle is 4 miles per hour less than twice Liz’s. If Frank’s average speed is 12 miles per hour, what is Liz’s average speed?”

   If $s$ represents Liz’s average speed riding a bicycle, which of the following equations can be used to solve the problem.
   a) $4 - 2s = 12$  b) $2s + 4 = 12$  c) $2s - 4 = 12$
   d) $s = 2(12) - 4$  e) $s = 2(12) + 4$
9. If \( a = -2 \), then the value of \( 4a^2 - 2a + 3 \) is

a) \(-65\)  b) \(-17\)  c) 15  d) 23  e) 71

10. If \( y = x^3 \) and \( x = \frac{1}{4} \), then what is the value of \( y \)?

a) \(\frac{1}{64}\) b) \(\frac{1}{16}\) c) \(\frac{1}{12}\) d) \(\frac{1}{4}\) e) \(\frac{3}{4}\)

11. Given the function \( y = f(x) \) in Figure 1, find the domain and range of the function. What is the value of \( f(1) \)? Estimate the horizontal and vertical intercepts.

How many of these problems can you miss and still succeed in MATH 211?

Ideally, NONE.

These problems are just a of the skills that you should be familiar with BEFORE taking this course.

If some of these ideas are not familiar to you, you should enroll in the prerequisite course (MATH 95).