**Prerequisite Skills for Math 1160**

Please take a look at the following list of prerequisite skills that are needed for Math 1160. You need to be proficient in these skills in order to do well in the class. Put a check mark next to the skills that you are proficient with. For those skills that you are not comfortable with and you feel that you need some review, please use the internet to find aids to review those skills. There are many easily found websites that provide help for the skills listed below. It is up to you to find these websites.

_____ 1. Know the difference between a mathematical term, a mathematical expression, and an equation. In lecture, the words “term”, “expression”, and “equation”, will often be used, so it is helpful to know what each of the three words represents.

_____ 2. Know the definitions for “coefficient” and “variable”. Be able to identify coefficients and variables when given an equation.

_____ 3. Be able to find the multiplicative inverse (i.e. the reciprocal) of a number (or a fraction). This skill will be needed in chapter 2.

_____ 4. Be able to confidently add and subtract fractions. This skill will help you in chapters 1, 2, 3, 5, 6 and 11.

_____ 5. Be able to confidently multiply and divide fractions. This skill will help you in chapters 1, 2, 3, 5, 6 and 11.

_____ 6. Know the order of operations and be able to apply them correctly with complicated looking expressions and equations. This will help you in chapters 1, 2, 10 and 11.

_____ 7. Regarding exponents, know that \(-3^2\) is NOT EQUAL to 9. You can verify on your calculator that \(-3^2 = -9\) and \((-3)^2 = 9\). If you want to raise a negative number to some power, you must place the negative number inside parentheses. This fact is very important in chapter 11.

_____ 8. Be able to do retail mark-up problems. These types of problems are related to many of the concepts presented in chapters 10 and 11.

_____ 9. Be able to confidently simplifying a complex expression using the order of operations correctly. This skill is needed for chapters 10 and 11.

_____ 10. When given a formula that contains several variables, be able to confidently solve for a specified variable using the order of operations correctly. This skill will be needed in all of the chapters.

_____ 11. When given a complex formula with several variables, and given values for all but one of the variables, be able to confidently substitute the values in the formula and simplify the expression to find the value of the unspecified variable (by using the order of operations correctly). This skill will be needed in chapters 10 and 11.

_____ 12. Be able to identify equations that are linear equations. See chapter 1, section 1, of the Math 1160 textbook. This skill will be needed in chapters 1 and 3.
13. When you are given a linear equation that is in “general form”, use the methods from your previous algebra class, to be able to find the “standard form” of a linear equation. See chapter 1, section 1, of the Math 1160 textbook. This skill will be needed in chapters 1 and 3.

14. When given a graph of a horizontal line, know how to describe it using an equation. This skill is needed in chapters 1 and 3.

15. When given a graph of a vertical line, know how to describe it using an equation. See chapter 1, section 1, of the Math 1160 textbook. This skill is needed in chapters 1 and 3.

16. Be able to confidently graph linear equations. See chapter 1, section 1, of the Math 1160 textbook. This skill is needed in chapters 1 and 3.

17. Be able to find the slope of a line when given:
   (1) two points,
   (2) when given a linear equation that is in “standard form”, and
   (3) when given a linear equation that is in a “general form”.
   See chapter 1, sections 1 and 4, of the Math 1160 textbook. This skill is needed in chapters 1 and 3.

18. Know how to tackle word problems. First, read the problem in its entirety. Next, after you have read the entire problem, determine what the problem is asking. Third, create and define any variables that you will need use to solve the problem. Fourth, set up any equations or statements needed to solve the problem. Fifth, use the appropriate facts and information to solve the problem. FINALLY, clearly state the answer to the problem.

19. When given a word problem that contains some unknown quantities, be able to assign letters that are used for variables needed to solve the problem and write out what each of the variables represents. One should have encountered this skill in both a pre-algebra and an algebra class. This skill will be needed throughout the class.

20. Be able to solve a system of two equations with two unknown variables. This skill will be helpful in chapters 1, 2 and 3.

21. Understand how to solve a system of three equations with three unknown variables. This will be helpful in chapter 2.

22. Be able to find some very simple probabilities. For example, when a fair six-sided dice is tossed, find the probability that a three is rolled? This skill is needed in chapter 6.

23. Be able to identify the Roman numerals 1 through 10. Roman numerals are used in chapters 5 and 6.

24. When you perform an operation in your calculator and the result is a decimal number, know how to use your calculator to change it to a fraction (if possible). Consult the calculator manual. This skill will be helpful on tests.

25. When given a complex expression containing only numbers and operations, use your calculator to confidently find the value of the complex expression. Consult your calculator manual.
26. Know the difference between the button used to insert a negative/opposite sign and the button used for subtraction on your calculator. Consult your calculator manual.

27. Know how to evaluate a number with an exponent that is not a 1 or a 2. For example, know how to evaluate $4.6^8$ using your calculator. Consult your calculator manual.

28. Use the equal sign properly. You use the equal sign when two statements are equal to each other.

29. Understand how the calculator displays numbers that are in scientific notation. For example, the number 0.0000481 is displayed as $4.81 \times 10^{-5}$ and the number 45,920,000,000,000 is displayed as $4.592 \times 10^{13}$. If you see $2.3423 \times 10^{-8}$ in the calculator, then you know that the number is 0.000000023423, and if you see $1.345621 \times 10^{10}$ in the calculator, you know that it represents 13,456,210,000.