**MATH 90**                                              Name: _____

**Day 1 Review**                                                        **FALL 2018**

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**<u>DIRECTIONS:</u>** Today's work comes from the Elementary Algebra Review (R) Section at the back of the textbook. My hope is that you are OK with these ideas, but, if not, the idea is to catch any gaps early so that you can fill them through connecting with a tutor, reviewing from the book, visiting me during office hours, creating a study group with your classmates, and/or reviewing videos online (through MML, at Khan Academy, etc.) in order to refresh and make sure you are on track for Math 90. We'll get through as many of these on this busy first day as we can. I will also hand out a key so that you can finish any problems not done in class and check your work. There is also a related MyMathLab assignment in which you can click on "helps" in order to get further reminders about how to do these review problems from the Beginning Algebra level.

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- Operations on Polynomials

    - Subtraction of Polynomials

    - Multiplication of Polynomials (aka FOIL)

    - Division of Polynomials

    - Raising Polynomials to a Power

    - Simplify expressions involving nested parentheses

- Evaluate expressions and formulas

- Solving Linear Equations in One Variable

- Solving Linear Inequalities in One Variable and Using Various Solution Representations

- Word Problems:

    - Strict Translation

    - Consecutive Integer Problems

    - Geometry Problems

    - Percent Problems

- Work with laws of exponents - including negative exponents and zero as an exponent

- Problems Involving Lines

    - Find the slope of a line given two points on the line

    - Find the intercepts of a linear equations

    - Find the equation of a line given information about that line

    - Determine the relationship between two lines: parallel, perpendicular, or neither

## Operations on Polynomials

1. $(3x^4 + 15x^3 - 4x^2 + 2x - 1) - (4x^4 + x^4 - 7x^3 - 4x^2 - 3x + 1)$

2. $(2x - 3)(5x + 4)$

3. $\dfrac{4x^3 - 4x^2 + 5x - 8}{2x - 1}$

4. $(x + 5)^3$

5. $(x^2 - 4x + 7)^2$

6. $3 - 10[5(2x - 3) - 2(x + 1)] - 5(x + 10)$

7. Evaluate $x^3 + 7x^2 - x + 17$ for $x = -3$

8. If the formula for the area of a parallelogram is $A = bh$, what is the area of a parallelogram with base 12.4 inches and height 3.1 inches?

9. Solve $2(x - 4) = 3x - (x - 6)$ for $x$

10. $\dfrac{2}{5} + \dfrac{1}{3}x = 5$

11. Solve $2 - 6x \leq 20$ and give your answer in set=builder notation **<u>and</u>** in interval notation.

12.    The length of the lid of a rectangular box is 2 inches more than its width. If the area of the lid is 35 square inches, what is the length of the lid of the box?

13.    A product is on sale for 15% off. If the original price is $18.00, what is the sale price?

14.    Twice the difference of a number and three is the same as twelve more than the number. What is the number?

15.    The product of the largest and smallest of three consecutive even integers is four less than ten times the middle of the three consecutive even integers. Find all three integers.

16.  Simplify each of the following:

a)  $x^2 x^3$

b) $\left(x^2\right)^3$

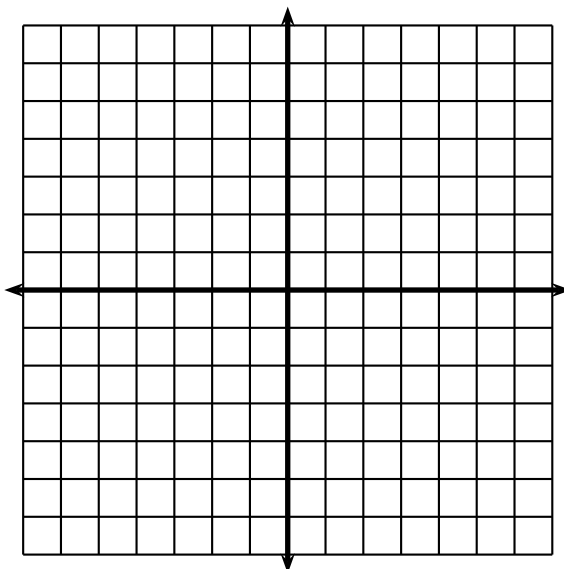c)  $x^3 y^4 (3x^5 y^7)^2$

d)  $27^0$

e)  $-27^0$

f)  $\dfrac{-2x^{10} y^{-12}}{8x^{-5} y^{-2}}$

Lines

17.  Find the slope of a line going through the points $(-2, 4)$ and $(-7, -1)$.

18.  Find the equation of a line going through the points $(-2, 4)$ and $(-7, -1)$.

19.  Graph $x = 2y - 6$ on the grid provided.

20.   Are the lines $2x + 3y = 6$ and $2x - 3y = 6$ parallel, perpendicular or neither?

21.   Find the equation of a line perpendicular to $2x + 3y = 6$ that goes through $(6, 1)$.