MATH 1070-070: Algebra Review

There are problems on both sides of each sheet.

May 13, 2008

Although this class is the study of Statistics, you must be able to understand and use Algebra at the level of Math 1010. Therefore, I have written up this review of Math 1010 for you to look over and work through. This is not homework. It is for you to guage whether or not you are even ready to be in this class. If you struggle through the concepts within this review, you should reconsider your decision to take this class. **Please do not take this warning lightly!** If you are struggling with basic algebra, then you will struggle painfully through the next 6 weeks. Note that you may need to pull out your old Math 1010 material. If you do not have this, then you need to seek help in another way; the internet is a good source. Do a search on Algebra review and you should get more review material than you could have ever wanted. I will post solutions on the class website www.math.utah.edu/ guajardo/Math1070 this weekend. I will not go over this material in class as it is material you should already know. If you do have questions though, you are welcome to meet with me before class on Thursday. I'll be in the main lobby from about 5 or 5:30 pm until class starts.

1. Simplify:
$$\frac{\frac{3}{5}-\frac{2}{3}}{\frac{1}{3}+\frac{3}{5}}$$

2. Solve the following equation for x:
$$4x-3=10-2(x-1)$$

3. Find all solutions of the equation
$$x^2-x-20=0$$

4. Find all solutions of
$$\frac{8}{x-2}-\frac{5}{x-3}+1=0$$

For the next three questions, let
$$f(x)=\frac{x-1}{x^2-2x}$$

5. What is the domain of f?
6. Find $f(5)$.
7. Find $f(2x+1)$ and express it in the standard form of a rational expression.

8. Solve the equation
$$\sqrt{x+4}+\sqrt{x+11}=7$$

9. Solve the system for x and y.
$$\begin{cases} 4x-y &= 1 \\ 2x+y &= 0 \end{cases}$$

10. Find an equation of the line that passes through $(2,1)$ and has slope $\frac{-1}{2}$. Draw its graph.

11. Simplify (i.e., write with only positive exponents, such that x and y occur only once) the expression

$$\frac{\left(x^2y^{-3}\right)^2}{\left(x^{-1}y\right)^{-3}}$$

12. Simplify the expression

$$\left(\frac{x^{3/2}}{x^{1/6}}\right)^{2/5}$$

and write it as a power with a single exponent.

13. Solve the following inequality

$$|2x-1|+2 \leq 8$$

and graph the solution on a real number line.