Dear Students,

I promised I would give you a few more notes. I will also go over this on Tuesday and let you work on it for a bit in class and you can turn it in on Thursday. In our last class on Thursday, I wanted to do more examples and explanation.

HW #1 in Section 10.1 has three sections. The 1st section wants you to multiply and this is good practice because factoring is multiplication in reverse. One has to know how to multiply polynomials before they can factor them. The 2nd section has you find the GCF of a few terms. The 3rd section has you, not only find the GCF, but also you rewrite the original problem as factors using the GCF.

You have all, hopefully, completed the 1st homework assignment and thus you should know that on the left of your paper there is a four-line header and then on the fifth or sixth line, please write the title. For the assignment due on Oct. 1st, the title is HW #1.

Please write all problems by the left margin. We use the right side to do additional work on a particular problem.

You will also write the section number. The rest of this document shows a few sample problems in order for you to see how your homework should look. Any words in red are just my comments and they don't have to be put in your homework.

Joe Smith
Mr. Diss
Math 95
October 1, 2024

HW #1

10.1	
1.	$-4x(x-2) = -4x^2 + 8x$
	We multiply the -4x times each term inside of the ( ). Watch the signs !!! You can go to 5.4 to get some more help. These problems usually just require one more step on your part, and that is the multiplication.
	The next section of problems starts with problem 9. and you need to find the GCF of all of the terms listed. You first look at the coefficients, those are the numbers in front of each term. It may be helpful to list all the factors of these coefficients and then find the greatest common factor in all of the lists. If there is the same variable in each term, find the one with the lowest exponent. I know this sounds counter intuitive, but the if you have a x^3 and a x^2 and a x^5, you can't get any larger factor than x^2 in the term with x^2. Breaking this term all the way down to its prime factors, you only have $x \cdot x$ and no more.

	I have worked problem 17. for an example.
17.	$6x^{17}, -12x^{14}, 30x^2$ The GCG is $6x^2$. The reason for this is that looking at the coefficients of 6, 12, and 30, each of these numbers have a lot of factors, but the greatest factor that is also common is the 6. There is an ***x*** in each term and the one with the lowest exponent is $\boldsymbol{x^2}$. I have made a list of factors for each coefficient so you can see that 6 is common and is the greatest. 6: 1, 2, 3, 6 12: 1, 2, 3, 4, 6, 12 30: 1, 2, 3, 5, 6, 15, 30
	The last set of problem,s starting at number 21, require the entire factoring. You first find a GCF and then divide this GCF into the original polynomial, and the result is put in a ( ). I will work 33.
33.	$32t^4 - 12t^3 + 24t^2 = 4t^2(8t^2 - 3t + 6)$
	We can also check the problem and we will write the word, "Check" and take the factored result and multiply it. We should end up with the original problem.
	Check
	$4t^2(8t^2 - 3t + 6) = 32t^4 - 12t^3 + 24t^2$
	We multiply the $\boldsymbol{4t^2}$ times each term inside and sure enough, we end up with the original problem. You are not required to do "checking", but it is a good idea.

I hope this helps you complete HW #1, if not, please don't worry because we will spend a lot of time on it on Tuesday, October 1, 2024.

Thank you,
Mr. Diss