Mth 28, Homework 1 on sections 3.5, 6.1

Due by Wed, Feb 7.

Here are 9 questions for you to try. Write all your working out and answers on your own notepaper. Please use lots of space and as many pages as you want, so I can include corrections or comments - otherwise I will ask you to redo it. You do not need to write the questions, but it is very important that you show clearly any work you had to do to get your answers. Each question is worth 2 points for a total of 18.

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(1) This first question reviews some basic algebra - see chapter 1 of the textbook. Simplify the following by combining like terms and distributing:

(a) $4x + 10x - 13x - 1$

(b) $2x(x^2 + 5x - 2)$

(2) Another basic algebra question. Multiply this out by distributing or using the FOIL method and simplify:

$$(x - 3)(2x + 1)$$

(3) Simplify this as well:

$$(-3x)^2 + 4x(x - 5) - (2x + 3) + 1$$

(Did you get $13x^2 - 22x - 2$? I hope so.)

(4) Let $f(x) = 4x - 7$. For this function find

(a) $f(3)$

(b) $f(-10)$

(c) $f(x - 3)$

(For part (a) replace x by 3 in the formula and compute the number. Part (b) is similar. For part (c) simplify your answer.)

(5) Let $g(x) = 2x^2 + 3x + 4$. For this function find

(a) $g(0)$

(b) $g(-4)$

(c) $g(3w)$

(Did you get 16 for part (b)? Not correct!)

(6) For $6x^2 + 21x$

(a) Find the Greatest Common Factor of these two terms.

(b) Use this GCF to factor the expression.

(7) Factor the expression: $10x^3y - 25x^2y^2$

(To find the GCF, see which number factors the two terms have in common, then how many xs and ys are in common. The GCF is the first factor - see what the second factor must be. Check your answer by multiplying out.)

(8) Factor by grouping: $x^3 + 2x^2 + 3x + 6$

(Group the first two terms together and take out their GCF. Do the same for the last two terms...)

(9) Factor by grouping: $8ab - 2bx + 4ay - xy$

If you get stuck on a question or aren't sure if you understand it:

- Go over the relevant class notes and section in the textbook.
- Check if you get the right answer for a similar odd-numbered question in the textbook (answers at the back of the book).
- Ask me about it after class.
- Come to my office hours: Mon 12:00 - 1:00, Wed 12:00 - 1:00 in CP 317.
- Go to the Math Tutorial Lab in-person in CP 303 or online.