Try these 12 questions. Please use lots of space and as many pages as you want, so I can include corrections or comments. 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 24.

Section 5.4 Dividing polynomials

(1) Divide these monomials: $8x^5y^2 \div (4x^2y)$

(Hint: write as a fraction and use properties of exponents.)

(2) Simplify: $-18a^4b^8 \div (12a^4b^{10})$

(3) Divide these polynomials: $(-20x^4 + 15x^3) \div (5x^2)$

The answer is a polynomial.

(4) Divide: $(26x^5 + 13x^4 - 13x^3 + 4) \div (-13x^3)$

The answer is not a polynomial here.

(5) Find $(x^2 + 7x + 10) \div (x + 2)$ and check your answer with a multiplication.

(For example with numbers $24 \div 4 = 6$ and this checks out because $4 \cdot 6 = 24$.)

(6) Compute $(x^3 + 1) \div (x + 1)$ and check your answer with a multiplication.

(7) Perform the operation $(x^2 - 5x + 2) \div (x - 2)$ and give the quotient and the remainder.

Section 6.1 Greatest Common Factors

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

   (a) Find the Greatest Common Factor of these two terms.
   (Hopefully you found $3x$.)
   (b) Use this GCF to factor the expression.
   (Hint: divide it by the GCF to get the second factor – the first factor is the GCF.)

(9) For $28x^4 - 12x^3 + 4x^2$

   (a) Find the Greatest Common Factor of these three terms.
   (b) Use this GCF to factor the expression.

(10) Use the GCF to 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.)

(11) 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...)

(12) 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.