

*Office Hours 10:00am-12:00pm Monday-Friday.*

To contact me:

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*Assignment 4/27*

Directions: Factor out a greatest common factor (if possible). If there isn't a greatest common factor, write "not factorable."

1.  $4x^2 + 10x$
2.  $10x^3 - 20x$
3.  $-8x^5 + 24x^2$
4.  $2x^2 + 10x - 18$
5.  $6x - 5$
6.  $7x^2 + 10x$
7.  $-4x^3 + 22x$
8.  $6x^2 + 10x - 18$
9.  $-8x^3 - 16x^2 + 24x$
10. In your own words, explain how to find the greatest common factor of a polynomial.

*Assignment 4/28*

Directions: Factor each trinomial when  $a = 1$ . If it is not factorable, write “not factorable.”

**Notes:**

- When  $a = 1$ , a factorable trinomial will factor into two binomials.
- Determine the two numbers that multiply to equal  $c$  and add to equal  $b$

**Example:**  $x^2 + 10x + 21$

$$= (x + 3)(x + 7)$$

1.  $x^2 + 12x + 32$

2.  $x^2 - 2x - 24$

3.  $x^2 - 12x + 27$

4.  $x^2 - 6x - 7$

5.  $x^2 + x - 42$

6.  $x^2 + 6x - 9$

7.  $x^2 - 7x - 30$

Factor out a greatest common factor.

8.  $10x^3 - 25x^2$

9.  $24x^2 - 10x + 18$

10.  $x^3 + 11x^2 + 20x$

*Assignment 4/29*

Directions: Factor the difference of two squares pattern. If it is not factorable, write “not factorable.”

**Notes:**  $a^2 - b^2 = (a + b)(a - b)$

For the polynomial to be the difference of two squares pattern,

- The polynomial must be a binomial
- It must be subtraction
- Both terms need to be perfect squares

**Example:**  $4x^2 - 9$

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

1.  $x^2 - 16$
2.  $x^2 - 25$
3.  $9x^2 - 16$
4.  $25x^2 - 81$
5.  $16x^2 + 1$
6.  $36x^4 - 25$
7.  $100x^2 - 27$
8.  $49x^2 - 1$

Factor:

9.  $8x^2 - 16x$
10.  $x^2 - 10x - 11$

*Assignment 4/30*

Directions: Factor each trinomial when  $a \neq 1$ .

**Notes:** Use the five-step method to factor trinomials when  $a \neq 1$

1. Multiply  $a$  and  $c$  and rewrite the trinomial
2. Find the two numbers that multiply to equal  $c$  and add to equal  $b$
3. Divide each number by the leading coefficient
4. Simplify any fraction if possible.
5. If there is still a fraction after dividing, put the denominator of the fraction in front of the  $x$

**Example:**  $2x^2 + 9x + 9$

$$x^2 + 9x + 18$$

$$(x + 6)(x + 3)$$

$$\left(x + \frac{6}{2}\right)\left(x + \frac{3}{2}\right)$$

$$(x + 3)\left(x + \frac{3}{2}\right)$$

$$(x + 3)(2x + 3)$$

1.  $3x^2 + 12x + 8$

2.  $4x^2 + 8x + 3$

3.  $5x^2 + 21x + 4$

4.  $6x^2 - 5x - 4$

5.  $8x^2 - 18x - 5$

*Assignment 5/1*

Directions: Factor each polynomial completely.

**Notes:**

- Throughout this week, you've factored in multiple ways using the method that I've explicitly told you to use. Now, you need to determine what method to use on your own.
- Your first step is to always factor out a greatest common factor if you can.
- After factoring once, look at what you have left over to see if that too can be factored.

1.  $x^2 + 11x + 24$

2.  $4x^2 - 9$

3.  $4x^2 - 20x$

4.  $2x^2 + 17x + 8$

5.  $x^2 + 3x - 54$

6.  $25x^2 - 1$

7.  $x^3 + 12x^2 + 20x$

8.  $8x^2 - 18$

9.  $5x^2 - 9x - 2$

10.  $3x^2 + 24x + 36$