Dear Honors Algebra II/Trig student,

I am excited to be your teacher for Honors Algebra II/Trig next year. Algebra originated in the Middle East in the early 1000s and focuses on solving polynomial equations. As such, factoring will be critically important to us throughout the course. Your summer work will consist of review exercises from the topics we covered in Honors Geometry and a factoring worksheet to keep our factoring skills sharp.

The worksheet is attached. The goal is to be sure that you understand important concepts from algebra and can apply them correctly. I will collect both the factoring worksheet and the review exercises on the first day of school. We will have a review exam on this material when we return in the fall.

The review exercises I want you to complete are from our textbook: *A Graphical Approach to PreCalculus with Limits*. They are:

R Test. Page 1046. 3-46 all

Chapter 1 Review. Page 83. 1-4all, 18, 21-28all, 32, 34, 36, 44, 52, 54, 56

Chapter 2 Review. Page 173. 1-10all, 16, 26, 30, 31, 34, 38, 39-44all, 50, 54, 62, 64, 66, 68, 74, 76, 80-100 even

Chapter 3 Review. 4, 8-16even, 17-24all, 38, 40, 42

You are ultimately responsible for understanding the material. Ask yourself, "Why?" Often the best way to improve our own understanding is to teach the material. Try to explain why it works to yourself or someone else. If something does not click for you, there are tons of resources online. However, you need to be able to understand the concepts and not just do the problems.

Have questions? You can always reach out to me via email at twakefield@youngstowndiocese.org if something comes up. We can also schedule Zoom or in-person meetings over the summer where I will be available to answer questions.

Work hard, enjoy your summer, and keep in touch. I'll see you for sure in the Fall if not before. I am confident that we have a good and productive year.

Sincerely,

Dr. W

Algebra Factoring Review

∴ Greatest Common Factor - GCF: $ab+ac=a(b+c)$

1. $3x+6$
2. x^2+2x
3. $8x-16x^2$
4. $12x+15y$
5. $8a+12ab+16a^2b^2$
6. $34x-51y+68z$
7. $39-91a+130x^2$
8. $x^2-abx^2+ax^3$
9. $328x^2y-204xy^2+806x^2y^2$

∴ Difference of Squares - DoS: $a^2-b^2=(a+b)(a-b)$

1. x^2-81
2. x^2-144
3. x^2-225
4. $16x^2-121$
5. $81x^2-144$
6. $12x^2-75y^2$
7. $169-36x^2y^2$
8. $18x^2-50x^4$
9. x^4-1
10. x^8-y^8
11. $324x^2y^6-361z^{10}$
12. $400-441x^6$

I. Perfect Square Trinomials - PST: $a^2\pm2ab+b^2=(a\pm b)^2$

1. x^2+4x+4
2. $x^2-8x+16$
3. $x^2+14x+49$
4. $4x^2-20x+25$
5. $16x^2+72xy+81y^2$
6. $9x^2-60x+100$
7. $12x^2+60x+75$
8. $169x^2-26x+1$
9. $196x^2+420xy^2+225y^4$
10. x^4-2x^2+1
11. $x^8-2x^4y^2+y^4$
12. $x^2+13x+36$

I. Second Sign Plus - SS+: Add to get middle term.

1. x^2+5x+6
2. x^2-6x+5
3. $x^2+12x+35$
4. x^2-9x+8
5. $x^2+7x+12$
6. $6x^2+13x+6$
7. $2x^2-13x+20$
8. $8x^2+30x+7$
9. $6x^2+26x+24$
10. $4x^2+16x+16$
11. $12x^2-43x+35$
12. $57x^2+76x+28$
13. $36x^2-74xy+30y^2$
14. $36x^2+84x+45$
15. $48x^2-136x+63$
16. $24x^2-82x+63$
17. $72x^2+174x+60$
18. $48x^2-226x+45$
19. $98x^2+203x+96$
20. $54x^2-123x+68$

I. Second Sign Minus - SS-: Subtract for middle term

1. x^2-x-2
2. x^2+x-6
3. x^2-x-20
4. $x^2+2x-15$
5. $x^2-2x-63$
6. $x^2+4x-32$
7. $2x^2+x-3$
8. $6x^2-x-2$
9. $5x^2+2x-3$
10. $5x^2-14x-3$
11. $6x^2+5x-6$
12. $6x^2+x-15$
13. $24x^2+2x-15$
14. $14x^2-3x-27$
15. $48x^2-26x-35$
16. $24x^2-98x-45$
17. $10x^2-29x-21$
18. $18x^2-15x-25$
19. $30x^2+23x-40$
20. $28x^2-15x-27$
21. $40x^2+3x-28$
22. $30x^2-13x-56$
23. $48x^2+104x-77$
24. $96x^2-24x-180$

VIII. Grouping : Distributive Property

1. $x(3a+b)+y(3a+b)$
2. $x^2(x-1)+2(x-1)$
3. $x^2(x+3)-4(x+3)$
4. $x^3(2x-1)-27(2x-1)$
5. $4xy+6x+6y+9$
6. $2x^3-3x^2-18x+27$
7. $ax^2+bx^2-4a-4b$
8. $ax^2-9b+bx^2-9a$
9. $5x^3-2x^2$
10. $3x^3-3xy^2+x^2-y^2$
11. $x^2-4x+4-y^2$
12. $x^2-4x^2-12xy-9y^2$