Summer Packet for Students entering Algebra II H 330 Due: Friday September 1, 2023

Name: _____

This packet contains the topics that you have learned in your previous courses that are most important to Algebra II. Please read the directions, do the problems, and show your work.

I. Use Order of Operations to simplify each expression.

1. $16 - 2(4 + 1) + 5$

2. $(2 + 3)^2 + (6 - (-3))^2$

II. Solve the equation for x. Remember to show your work!

1. $2(x + 2) = 6(x - 4)$

2. $5 + \frac{2}{3}(x+1) = 7$

Solve the equation for v. Remember to show your work!

1. $s = -\frac{1}{2}g^2t + vt$

III. Multiply.

1. $3x(2x^2 – 4x + 1)$

2. $(3x + 7)(x – 2)$

3. $(3x – 4)(2x^2 + 4x + 16)$

4. $(5x + 2y)^2$

IV. Factor Completely.

1. $x^2 – 7x + 10$

2. $2x^2 + 6x – 56$

3. $a(b – 2) + c(b – 2)$

4. $x^2 – 64y^2$

V. Solve each quadratic equation. Remember to show your work!

1. $x^2 + 6x + 8 = 0$

2. $x^2 + 6x = 4$

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VI. Simplify each expression using the Laws of Exponents

1. $(3xy)(-8x^2y^3)$

2. $(2x^4)^3$

3. $\dfrac{-12x^4y^3}{18xy^5}$

4. $(2x)^3\,(3x)^2 + x(x^5 - x^4)$

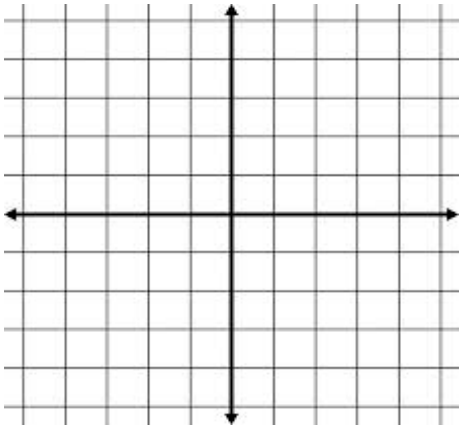
VII. Rational Algebraic Expressions. Reduce all answers

1. Reduce: $\dfrac{(x^2-4)(x-1)}{(x+2)(x^2-1)}$

2. Multiply: $\dfrac{x^2-x-6}{x^2-7x+12} \cdot \dfrac{x^2-16}{3x+6}$

VIII. Plot and label (using the letter) each ordered pair on the graph:

A (1, -3) B (-2, 5) C (0, 4) D (-3, 0)



IX. Find the slope of each line:

1. $y = 2x + 1$

2. $2x - 4y = 8$

3. Find the slope of the line through the points A (5, 1) and B (2, -1)

X. Simplify the radical. Write the answer as a reduce radical.

1. $\sqrt{36}$

2. $\sqrt{100}$

3. $\sqrt{8}$

4. $\sqrt{27}$