NORTHEAST CONSORTIUM

Algebra 2

Summer Pre-View Packet

DUE THE FIRST DAY OF SCHOOL

The problems in this packet are designed to help you review topics from previous mathematics courses that are important to your success in

Algebra 2

DO ALL PROBLEMS WITHOUT A CALCULATOR. Show all work that leads you to each solution on separate sheets of paper. You may use your notes from previous mathematics courses to help you. You must do all work without any help from another person. Additional copies of this packet may be obtained from the Main Office in your school or printed from the school's website.

Springbrook: www.springbrookmath.org
Paintbranch: www.mcps.k12.md.us/schools/paintbranchhs
Blake: www.mcps.k12.md.us/schools/blakehs

ALL work should be completed and ready to turn in on the FIRST DAY of school. This packet will count as part of your first quarter grade.

ENJOY YOUR SUMMER!! WE ARE LOOKING FORWARD TO SEEING YOU IN THE FALL.

Student Name: _____

School: _____

Date: _____ _____

NEC Algebra 2 Summer Review

Name: _____

SHOW ALL WORK ON A SEPARATE SHEET OF PAPER.

I. **Solve** for x:

1) $-4(3 - x) = 2(x + 6)$

2) $3x - 2(x + 1) = 0$

II. **Factor** each of the following polynomials:

1) $x^2 - x - 72$

2) $a^2 + 20a + 64$

3) $10m^3n^2 - 15m^2n$

4) $x^2 + 12x + 36$

5) $x^2 - 64$

6) $2x^2y - 4xy$

III. **Solve** the following quadratic equations:

1) $(2x + 1)(x + 3) = 0$

2) $p^2 + 6p = 0$

3) $r^2 + 10r + 9 = 0$

4) $x^2 = 16$

IV. **Determine** each of the following:

1) Find a formula for the area of a rectangle with $l = 2x + 3$ and $w = x - 2$

2) Find a formula for the area of a square with $s = 2x + 5$

3) The area of a square with side $2x - 1$ is 49. Find x.

4) Find the diagonal of a rectangle with $l = 40$ and $w = 55$.

5) The length of each leg of an isosceles right triangle is 4 cm. What is the length of the hypotenuse?

V. **Simplify** each of the following:

1) $(-3x^2 + 4x - 7) + (2x^2 - 7x + 8)$

2) $(39a^4 - 4a^3 + 2a^2 - a - 7) - (10a^4 + 3a^3 - 2a^2 - a + 8)$

3) $(3x + 7)(2x + 5)$

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

5) $(x + 6)^2$

VI. **Graph each of the following on graph paper or create your own grid.**

1) $y = -3x + 4$ 2) $y = (x - 2)^2 + 1$ 3) $y = |x|$

VII. Given the following **matrices**,

$A = \begin{bmatrix} 6 & -3 \\ 2 & 1 \end{bmatrix}$ $B = \begin{bmatrix} 5 & 6 \\ 2 & -1 \end{bmatrix}$ $C = \begin{bmatrix} 0 & 5 \end{bmatrix}$

Determine

1) A + B 2) A – B 3) -2C

VIII. Solve the following quadratic equations, using the quadratic formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

1) $2x^2 + 3x - 1 = 0$ 2) $3x^2 - 8x = -2$ 3) $3x^2 = 7 - 2x$

IX. Answer each of the following concerning **linear** equations.

1) Determine the slope of the line containing the points (6, -2) and (-1, 5).

2) Determine an equation for a line with slope ½ and y-intercept at (0, -3).

3) Determine an equation for a line parallel to $y = -3x + 4$, containing the point (2, 1).