

Algebra II with Analysis Summer Review Assignment

Dear Student and Parent,

The purpose of this packet is to provide a review of objectives that were taught the previous school year and provide tasks related to the common core curriculum. Reviewing the material will help your child retain what he/she has learned this year, and assist them as they enter the next course in the sequence of study.

Please remind your child that **CALCULATORS SHOULD NOT BE USED** and **ALL WORK MUST BE SHOWN** for each activity. If work is completed on a separate paper, please submit the paper(s) with the packet.

The completed packet will be due the second Friday of the new school year. This will be recorded as a homework completion grade during the first marking period.

Thank you for your cooperation,

The RCMs Math Department

I. Solve the systems of equations.

1. $5x + 4y = 6$
 $-2x - 3y = -1$

2. $-2x + y = 8$
 $y = -3x - 2$

3. $-x + 2y = 11$
 $3x - 2y = -13$

4. $3x - 2y = 5$
 $-6x + 4y = 7$

II. Solve the linear equations.

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

2. $2(3x + 6) + 8 = 6x$

3. $3(4 - x) = 12 - 3x$

4. $3x - 2(x + 1) = 0$

5. $3(x + 2) + 1 = 2x + 7 + x$

III. Factor

1. $x^2 - x - 72$

2. $7x^3 - 4x^2 + 8x$

3. $a^2 + 20a + 64$

4. $10m^3n^2 - 15m^2n + 25m$

5. $2x^2y - 4xy - 30y$

6. $x^2 - 64$

7. $2x^2 + 9x - 5$

8. $x^2 + 12x + 36$

IV. Solve the quadratic equations.

1. $r^2 + 10r - 9 = 0$

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

3. $x^2 - 3x = 10$

4. $5m^2 = 7m$

5. $(2c + 1)(c + 3) = 0$

6. $y^2 = 4y + 32$

7. $2x^2 - 3x - 2 = 0$

8. $z^2 = 16$

9. $d^2 + 5d - 1 = 0$

V. Write the equation of the following lines.

1. through $(0, -1)$, $m = -1$

2. through $(-2, 3)$, $m = \frac{4}{3}$

3. through $(3, -1)$, $m = 0$

4. vertical, through $(5, 4)$

5. through $(2, 3)$ and $(7, -2)$

6. through $(3, 4)$ and $(-2, 4)$

VI. Graph: state domain and range for each graph (use interval notation)

1. $y = -\frac{3}{4}x + 4$

2. $y = 3x + 2$

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

4. $y = x^2 + 6x + 1$

5. $2x + 3y = 12$

6. $y = |x|$

7. $y = |x + 2|$

8. $y = |x| + 3$

9. $y \geq 2x + 1$

10. $y < -3x + 4$

11. $y \leq 4$

12. $x > -2$

13. $y = 5$

14. $x = -2$

15. line through $(-1, 3)$ with slope 0

VII. Simplify

1. $(-3x^2 + 4x - 7) + (2x^2 - 7x + 8)$
2. $\frac{64x^3y^2 - 16x^2y^3 + 32x^5y^5}{8x^2y^2}$
3. $(39a^4 - 4a^3 + 2a^2 - a - 7) - (10a^4 + 3a^3 - 2a^2 - a + 8)$
4. $2x^2z(3x - 2z)$
5. $-3xy^3(x - 2y)$
6. $(3x^2 + x - 1)(2x - 3)$
7. $\frac{10a^3b^2c^7}{5a^5bc^7}$
8. $(8a^3b^2)(2a^{-4}b^{-5})$
9. $(-3x^2y^3z)^3$
10. $(5a^4b^2c)^0$
11. $\frac{3x^3y^2}{6x^{-2}y^5}$
12. $(3x + 7)(2x - 5)$
13. $(x + 6)^2$

VIII. Simplify (**exact answers** – no decimals – For example $\sqrt{8} = 2\sqrt{2}$)

1. $\sqrt{32}$
2. $\sqrt{\frac{3}{5}}$
3. $\sqrt{48xy^5}$
4. $\sqrt{\frac{3}{2}}$
5. $\sqrt{8} + \sqrt{18} - \sqrt{32}$
6. $\sqrt{21} * \sqrt{14}$
7. $\sqrt{16a^3b^2}$

IX. Solve

1. $\sqrt{2a} = 8$
2. $\sqrt{3x - 5} = \sqrt{2x + 4}$
3. $2 - \sqrt{x} = 4$
4. $\sqrt{3x} - 4 = 2$

X. Matrices

$$A = \begin{bmatrix} 2 & 5 & -1 \\ 3 & -2 & 0 \end{bmatrix} \quad B = \begin{bmatrix} 5 & -3 \\ 0 & 2 \\ -1 & 4 \end{bmatrix} \quad C = \begin{bmatrix} -1 & 3 & 0 \\ 5 & 2 & -3 \end{bmatrix}$$

1. $A + C$
2. $2B$
3. $C - A$
4. $A + B$
5. order of $[A]$
6. order of $[B]$
7. order of $[C]$