Algebra 2 Name: _____

Summer Assignment Date: _____ Block: _____

Robbinsville School District

Algebra 2 Summer Assignment

Welcome to Algebra 2! On the following pages you will find your summer assignment for the upcoming 2018-2019 school year. The summer assignment reviews material that you have learned in Algebra 1.

- The packet is to be completed and is **due on the first day of school**.
- It will be collected for a grade as it is pre-skill review material. It will be worth **10 points** and will be graded based on **thoughtful effort**.
- It is **recommended** that you work on this assignment during **August**.
- To help you review and complete your packet there are videos corresponding to sections of the packet. These videos may be accessed on any web-connected device with any web browser.
- Each video shares the identical title to the corresponding section in the summer packet. Additionally QR codes are available within the packet, when scanned using a smartphone or tablet these codes will link directly to the corresponding video.

Algebra II
Summer Assignment

Name: _____
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Section 1: Factoring quadratic expressions with $a = 1$. Factor each completely.

1) $x^2 - 3x - 18$

2) $x^2 + 6x - 40$

3) $x^2 - 15x + 56$

4) $x^2 - 6x + 8$

Section 2: Factoring quadratic expressions with $a > 1$. Factor each completely.

5) $3x^2 + 4x + 4$

6) $3x^2 - 10x - 25$

7) $3x^2 - x - 2$

8) $4x^2 - 27x + 18$

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Section 3: Factoring quadratic expressions with Difference of Two Squares. Factor each completely.

9) $9x^2 - 16$

10) $4x^2 - 1$

11) $36x^2 - 25$

12) $49x^2 - 16$

Section 4: Factoring polynomial expressions with a Greatest Common Factor and a quadratic expression with $a = 1$. Factor each completely.

13) $3x^2 + 9x + 6$

14) $2x^2 - 16x + 14$

15) $3x^3 + 33x^2 + 54x$

16) $6x^4 - 6x^3 - 36x^2$

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Section 5: Factoring polynomial expressions with a Greatest Common Factor and a quadratic expression with $a > 1$. Factor each completely.

17) $6x^2 + 32x - 70$

18) $15x^2 - 12x - 36$

19) $10x^3 - 44x^2 + 16x$

20) $15x^4 - 63x^3 - 162x^2$

Section 6: Factoring polynomial expressions completely by grouping.

21) $49x^3 + 21x^2 + 35x + 15$

22) $xy^2 - x - 4y^2 + 4$

23) $48xy - 40x + 18y - 15$

24) $54x^3 - 45x^2 - 24x + 20$

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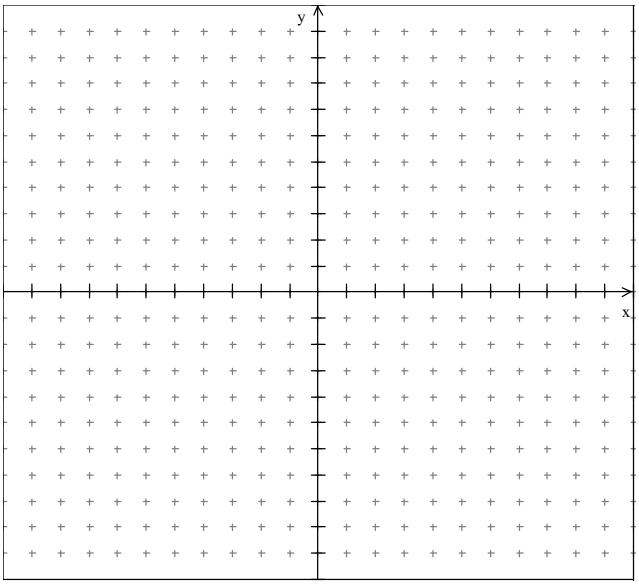
Section 7: Determine the slope, x intercept and y intercept given a Slope-Intercept Form equation and graph.

25) Equation: $y = -\frac{1}{2}x - 2$

Slope: _____

y-int: _____

x-int: _____

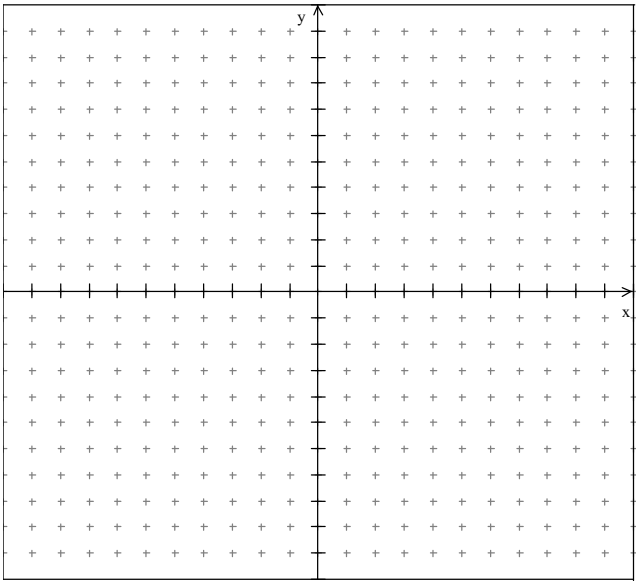


26) Equation: $y = 3x - 4$

Slope: _____

y-int: _____

x-int: _____



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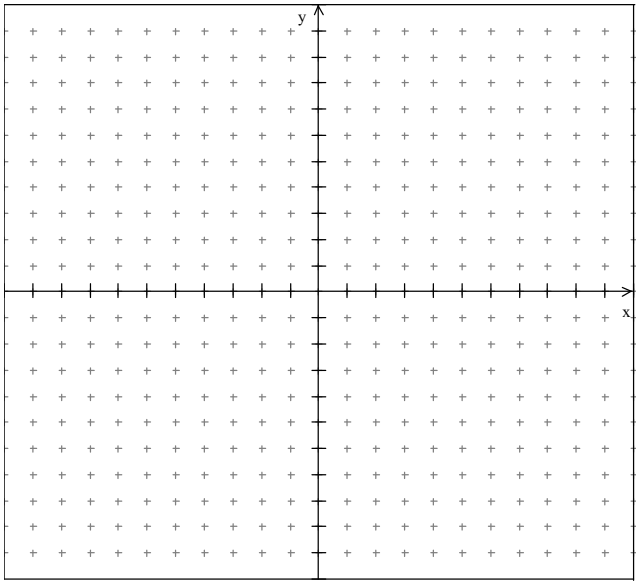
27) Equation: $y = 2$

Slope: _____

y-int: _____

x-int: _____



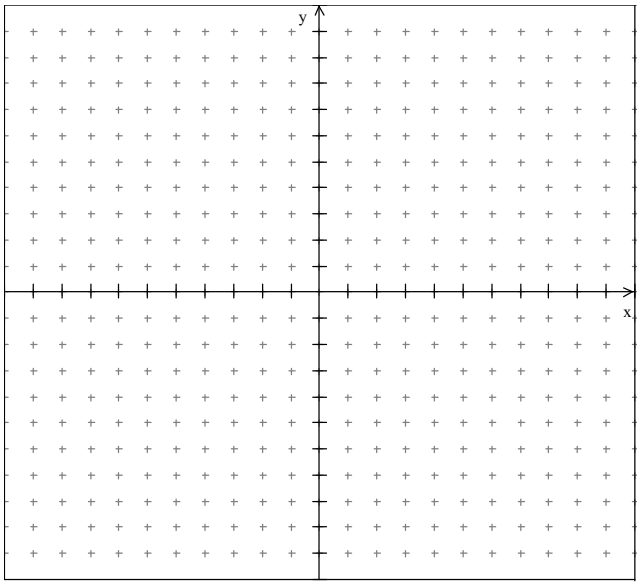
Section 8: Determine the Slope-Intercept Form equation, slope, x intercept and y intercept given two points and then graph.

28) Given: $(-1, 4)$ and $(0,1)$

Equation: _____

Slope: _____

y-int: _____



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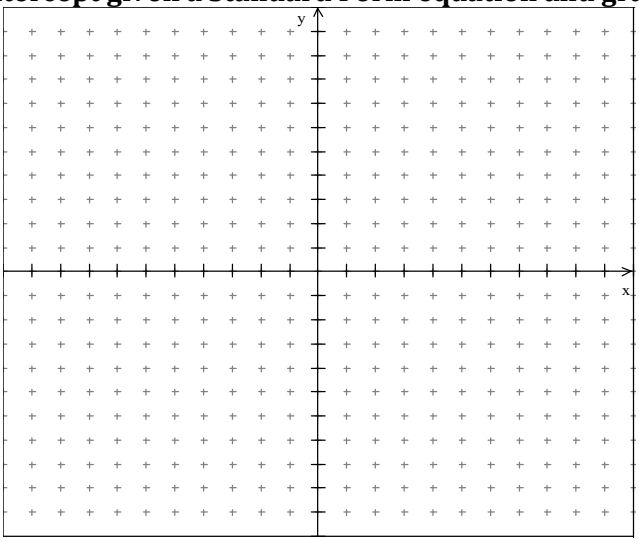
Section 9: Determine the slope, x intercept and y intercept given a Standard Form equation and graph.

29) Equation: $4x - y = 1$

Slope: _____

y-int: _____

x-int: _____



Section 10: Solve the equation for the variable.

30) $-125 = -5(5 + x)$

31) $-9 = -5 + \frac{x}{4}$

32) $12 = -3(4 - 6n) - (6 + 3n)$

33) $55 = 5(-4p + 7) - 4(5p - 5)$

For 34-35 express all solutions as fractions. Leave answers in EXACT form (fraction form).

34) $-\left(-k + \frac{1}{3}\right) = \frac{3}{4}(k - 6)$

35) $\frac{6}{7}(7p +) = \frac{9}{2}\left(p + \frac{4}{7}\right)$

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For 36-37 express all solutions as decimals rounded to the nearest hundredth.

36) $-7.1(7.8-3.9n)=-25.077$

37) $5.9(k+2.56)=-5.4k$

Section 11: Simplify each expression using exponent rules.

38) $(3)^4(3)^2$

39) $x^{-7}\cdot x^9$

40) $\dfrac{y^{15}}{y^5}$

41) $(-2x^2y^0)^4$

Exponent Rules For $a\neq 0, b\neq 0$	
Product Rule	$a^x \times a^y = a^{x+y}$
Quotient Rule	$a^x \div a^y = a^{x-y}$
Power Rule	$(a^x)^y = a^{xy}$
Power of a Product Rule	$(ab)^x = a^x b^x$
Power of a Fraction Rule	$\left(\frac{a}{b}\right)^x = \frac{a^x}{b^x}$
Zero Exponent	$a^0 = 1$
Negative Exponent	$a^{-x} = \frac{1}{a^x}$
Fractional Exponent	$a^{\frac{x}{y}} = \sqrt[y]{a^x}$

Section 12: Solve the system of linear equations using Elimination or Substitution. Answers should be expressed as fractions where appropriate.

42) $\begin{cases} 3x+5y=27 \\ 2x=8 \end{cases}$

43) $\begin{cases} x-7y=-28 \\ 9x+4y=16 \end{cases}$