Algebra 2 Honors Students, June 2021

Algebra 2 summer practice is designed to review Algebra 1 skills that are essential to your success in Algebra 2 Honors. Please print the worksheets out and complete. You will be invited to a canvas class a few days before the school year begins to upload you work and bring **completed** work on the **first** day of school. During the first two classes, you will be given the opportunity to ask questions about the topics listed in prerequisite material. **During the third class, you will take a summer practice assessment. The assessment will count as a quiz and will be closed notebook.**

Considering the effects COVID had on class rigor, it is important that you use this summer to fill in some gaps and reinforce skills. Calculators will not be used the first month of class. Your task is to complete the problems with work shown. If there is a problem you do not remember or seems like new material, you must be resourceful and utilize online resources, a study group, or a knowledgeable adult. Remember, you will be taking an assessment on the summer work the first week of school. Practice makes perfect so practice extra problems of a concept you may be struggling with. The concepts are listed on the second page. You will find extra problems in the online resources on the back.

The supplies you will need for class are: paper, pen or pencil, folder or binder. It is not a requirement to buy a graphing calculator but many students found it helpful to have one at home. It is an investment that may be used in future math classes, the SAT's, and college. Students have used a free app online for their computer or phone. However, you are not allowed to use a phone during class. We recommend a Texas Instrument TI-84 plus CE.

The intention of the summer practice is not for you to spend your summer doing math. Enjoy the month of July. Pace out the work through the month of August. This will allow to you to start school better prepared. If this work is too overwhelming or too difficult, you may want to discuss your course selection with your guidance counselor.

Mrs. Garcia and Mrs. Fantasia

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The following are Algebra 1 topics student must be fluent in before entering Algebra 2 Honors.

Solving equations
Solving inequalities
Absolute Value and inequalities
Relations and Function Notaion
Linear Equations
Linear Models
Factoring trinomials (guess and check method is recommended)
Graphing Quadratic Functions
Solving Quadratic Equations by Factoring
The Quadratic Formula
Completing the Square

Online resources:

Glencoe Website
The text book we will be using is Glencoe Algebra 2 2005.The following are sites in which you can assess to get support material and the book online.

https://sites.google.com/a/gaston.k12.nc.us/krarmstrongweb/home/text-book-pdf-form

The following is a youtube channel my students use throughout the year.

https://www.youtube.com/user/Mathbyfives

Online Graphing Calculator

https://www.**desmos**.com/

Algebra 2 Honors Name_____ ID: 1

Summer Packet 2021_2022

The following should be completed without a calculator.

Evaluate each using the values given.

1) $6+5-q-\left(p-\frac{r+p}{5}\right)$; use $p=4$, $q=2$, and $r=1$

2) $(y+3)^2-(xy-2y)$; use $x=4$, and $y=3$

3) $\left(\frac{y}{5}\right)^2+\frac{(x)(5-y)}{6}$; use $x=6$, and $y=5$

4) $(6)\left(5-\frac{(j)(3-j-k)}{6}\right)$; use $j=2$, and $k=1$

Solve each equation.

5) $-9(x-10)+7=-9x+97$

6) $-4x+4(12-12x)=8(1-9x)$

7) $5(p-1)-(10-3p)=12p-7p$

8) $-4(8a+8)=8(-2a-10)$

9) $\frac{1}{3}+1\frac{1}{3}p=-\frac{1}{2}\left(\frac{14}{5}p+\frac{24}{5}\right)$

10) $\frac{5}{3}\left(\frac{5}{6}k+\frac{5}{8}\right)-\frac{3}{2}k=-\frac{191}{216}+\frac{4}{3}k$

11) $-7\left|4-5n\right|=-7$

12) $9\left|8x+3\right|=117$

Factor the common factor out of each expression.

13) $-56r^4+32r^2-48r$

14) $-6m^5-6m^2+18m$

Factor each completely.

15) r^2+3r-4

16) v^2+5v+6

17) $v^2 + 15v + 50$

18) $7n^2 - 31n + 12$

19) $7b^2 + 6b$

20) $4n^2 + 10n$

21) $2x^2 - 9x - 5$

22) $18p^2 - 60p + 120$

23) $6n^2 + 14n$

24) $2a^2 - 5a - 63$

25) $7m^2 + 19m + 10$

26) $5k^2 - 29k + 36$

27) $14x^2 + 90x + 100$

28) $20a^2 + 88a + 84$

29) $7x^2 - 11x - 6$

30) $7x^2 + 39x - 70$

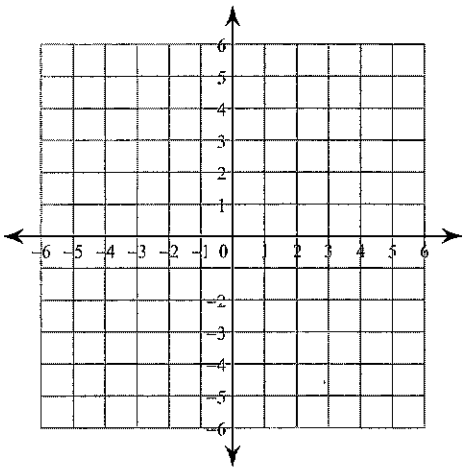
31) $8x^2 - 44x + 48$

32) $3a^2 - 11a - 20$

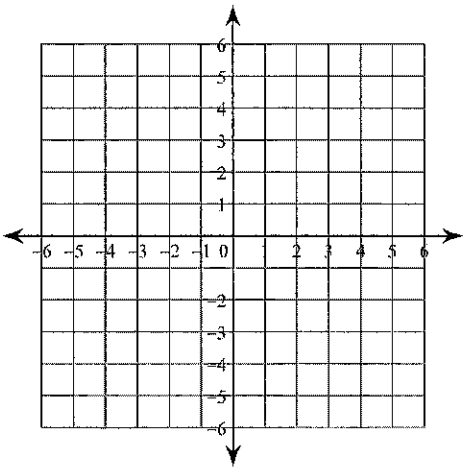
33) $2b^2 - b - 2$

Sketch the graph of each line.

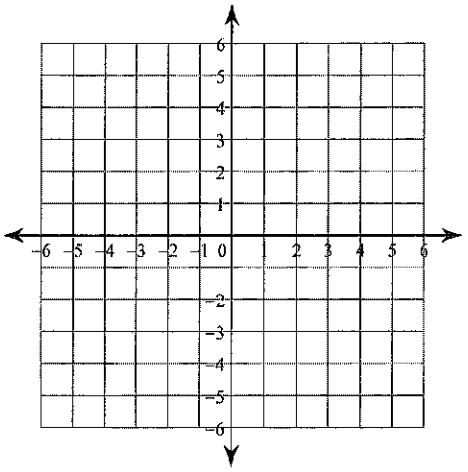
34) $y = -2x - 5$



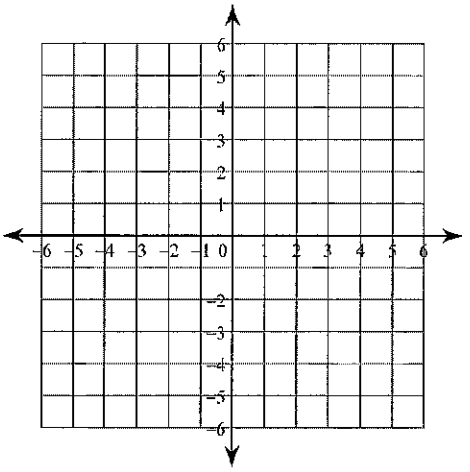
35) $x = 4$



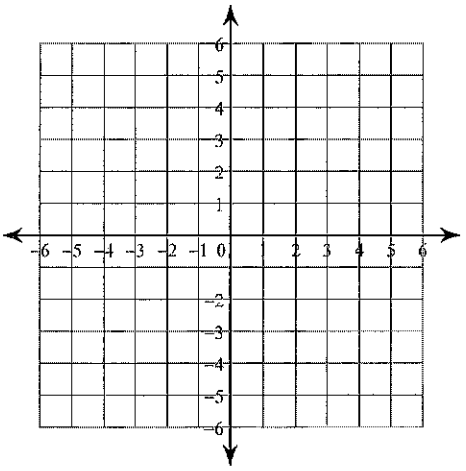
36) $x - y = -1$



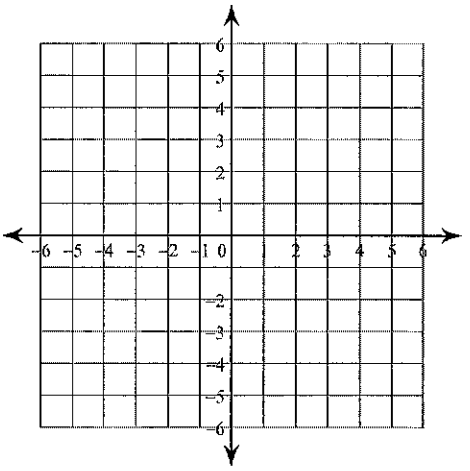
37) $x = -4$



38) $7x - 3y = -12$

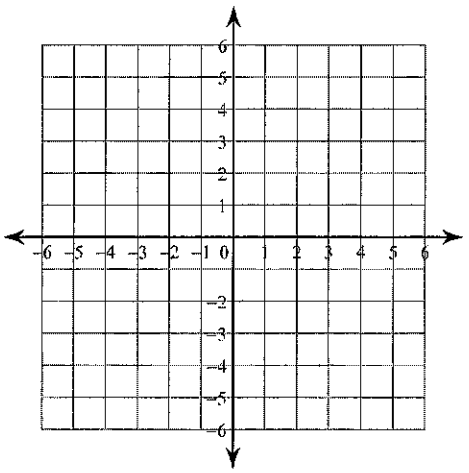


39) $x - y = -2$

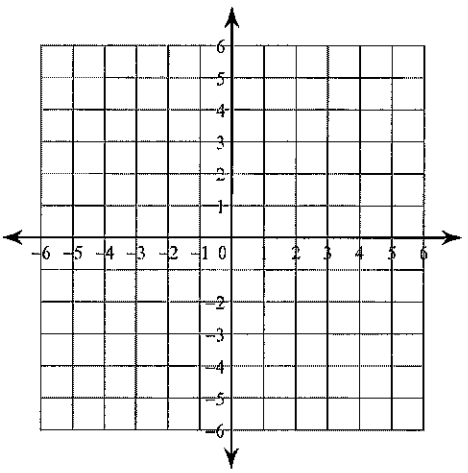


Sketch the graph of each linear inequality.

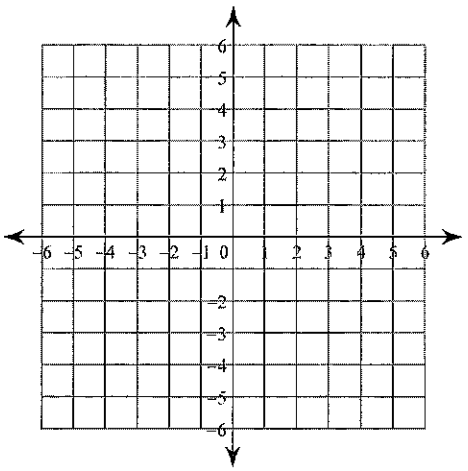
40) $6x - 5y \leq 15$



41) $4x + 3y > 0$



42) $y > -5$



Write the slope-intercept form of the equation of the line through the given point with the given slope.

43) through: $(-5, -4)$, slope $= -\frac{1}{5}$

44) through: $(-1, -1)$, slope $= 6$

Simplify.

45) $\sqrt{64}$

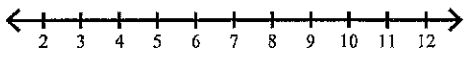
46) $\sqrt{20}$

47) $\sqrt{45}$

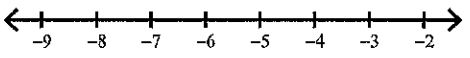
48) $3\sqrt{12}+\sqrt{27}$

Solve each inequality and graph its solution.

49) $-4(8v - 8) \geq -192$



50) $112 \leq -4(-7 + 3x)$



Simplify. Your answer should contain only positive exponents.

51) $3a^2 \cdot 2a$

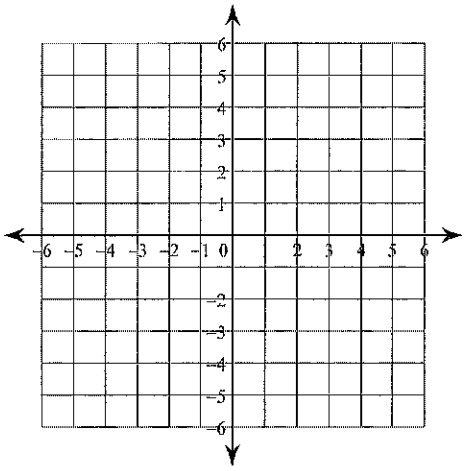
52) $2k^2 \cdot k^3$

53) $3x^2 \cdot x^2$

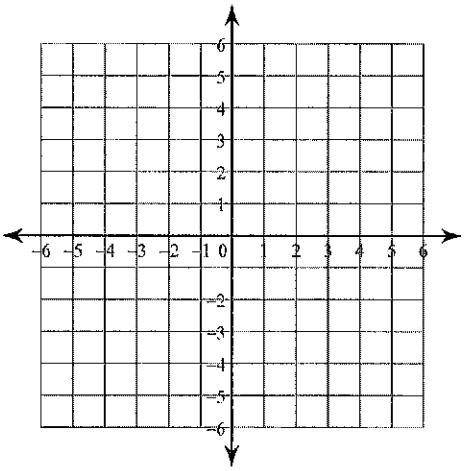
54) $2n^2 \cdot 2n^2$

Graph each equation.

55) $y = |x| + 1$

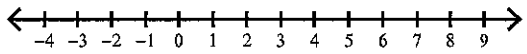


56) $y = |x + 2|$

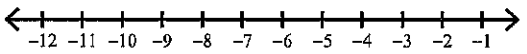


Solve each compound inequality and graph its solution.

57) $5 \le p + 7 \le 15$

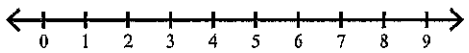


58) $-90 \le 9m < -36$



Solve each inequality and graph its solution.

59) $-202 \ge -8(1 + 6n) - 2$



Find each product.

60) $(2r - 7)(8r - 1)$

61) $(4x - 2)(6x + 2)$

62) $(8b - 5)(b + 3)$

63) $(2 + 6x)^2$ hint: the answer is not A

A) $4 + 36x^2$
B) $49 - 4x^2$
C) $4 - 36x^2$
D) $4 + 24x + 36x^2$

64) $(5+3v)^2$

Simplify each expression.

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

Simplify.

66) $-6\sqrt{90p^4}$

67) $-8\sqrt{105a}$

68) $-5\sqrt{48k}$

69) $7\sqrt{81x}$

Solve.

70) $n^2+4n=0$

71) $m^2-14m+48=0$

72) $4x^2 + 11x + 14 = 2x^2$

73) $31a^2 - 25a - 6 = 6a^2$

74) $8v^2 + 8 = 13v + 3v^2$

75) $43n^2 + 56n + 12 = -6n^2$

76) $r^2 - 24 = -5r$

77) $n^2 + 12n = -32$

78) $6x^2 - 9 = 3x$

79) $2r^2 - 8 = 0$

Solve each equation by completing the square.

80) $x^2 - 20x - 87 = -9$

81) $r^2 - 16r - 63 = -6$

82) $b^2 - 8b - 23 = -3$

83) $n^2 + 2n - 43 = 5$