Pre-AICE Mathematics 3
Summer Assignment for Students Entering August 2018

Students who are currently scheduled for Pre-AICE Mathematics 3 in the 2018 – 2019 school year. It is important that you complete each section of problems in its entirety. The goal of this assignment is not merely completion, but completion with excellence. These are topics and skills that need to be **mastered** by the time you come to school on August 10, 2018. Students who have not mastered these topics will experience extraordinary difficulty in Pre-AICE Mathematics 3 as these topics will not be taught as part of that class. You are also welcome to work with a friend, but make sure that you understand the material. During the first week of school, we will briefly review these topics. Following the review, there will be an exam covering this material.

Final Note: The goal of this assignment is for you to have mastered and retained the information. I recommend you complete this assignment in "chunks" so you do not overwhelm yourself, and so you have continuous exposure throughout the summer.

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If you need to email me with a question:

1.) Include your name in the email.
2.) Try to send a photo of the problem you're working on.
3.) State clearly which part you are experiencing difficulty with.
4.) I will only be checking my email occasionally. So, please try all other avenues of getting your questions answered first. Thank you.

Helpful Websites:

www.khanacademy.org

www.kutasoftware.com

www.learnzillion.com

www.math-drills.com

www.youtube.com

Section 1: Simplifying Expressions

Directions: Simplify each of the following expressions.

1. $4(p+2)+3(2p-3)$
2. $2(3p+2)+3(2p-3)$
3. $3p(2p-5)-2(3p-3)$
4. $2p(p^2+2)+3p(2p-3)$
5. $3p(p-2)+2p(3p-2)$
6. $2p(p-3)-3p(3p-2)$
7. $x(x^2-2y)+3x^2(x+2y)$
8. $a(b-c+d)-a(b-c+d)$

9. $a(a+2b-3c)-2b(a-b-3c)$

10. $3xy(4z-12)-5xz(2y+4)$

11. $2x^2(4xy-5)-8yx^3+9x^2$

12. $\frac{1}{3}(27x+18)-\frac{2}{7}(28x-42)$

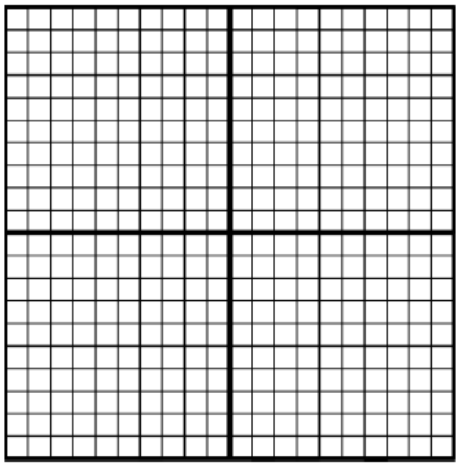
13. $x(x^2-2y)-3x^2(x+2y)$

14. $3c(a-2b+3c)-2b(a-b-5c)$

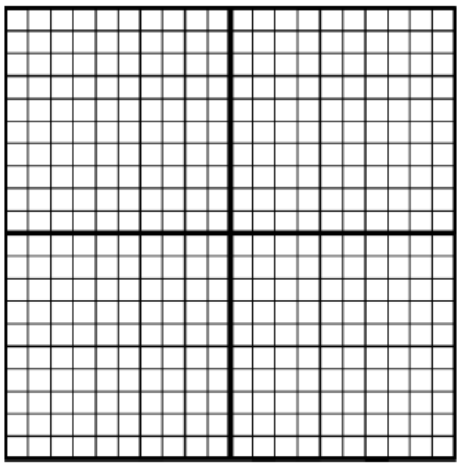
Section 2: Graphing Linear Equations

Directions: Graph each of the following linear equations on the coordinate plane. You may use any method you wish. However, I recommend choosing a specific method based upon the way the equation is presented.

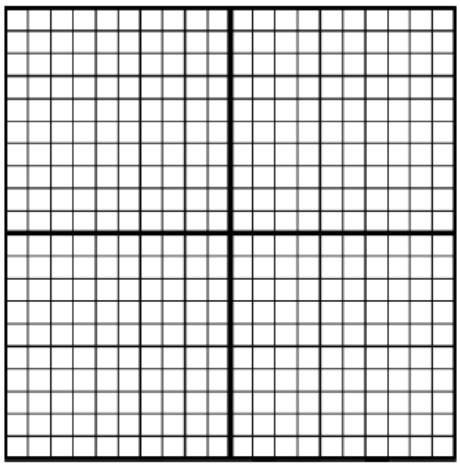
15. $y = \frac{7}{2}x - 2$



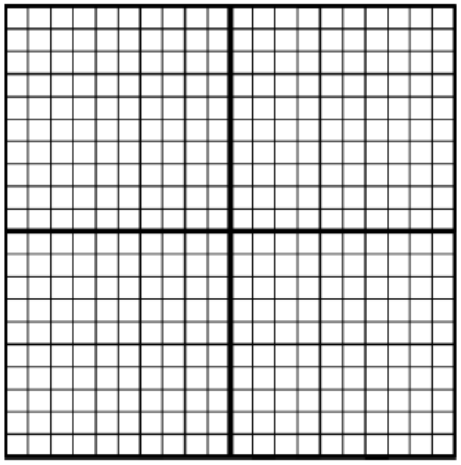
16. $y = -6x + 3$



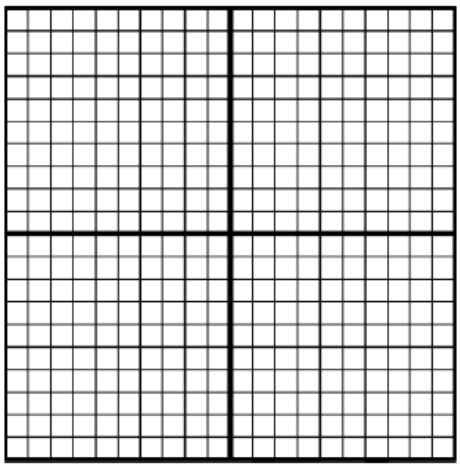
17. $y = -5$



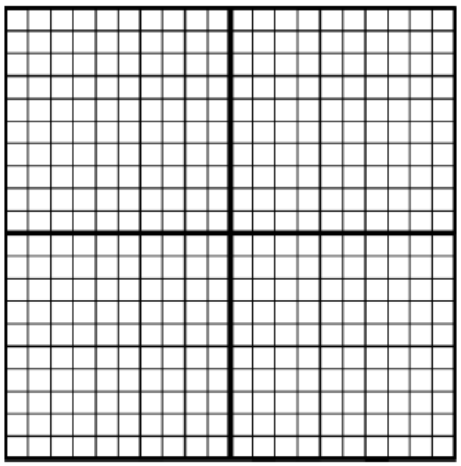
18. $y = \frac{6}{5}x + 1$



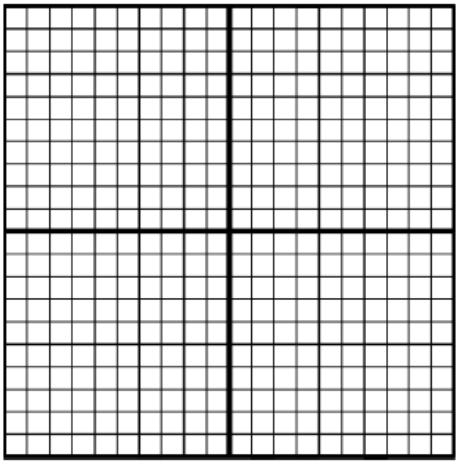
19. $y = \frac{1}{4}x + 2$



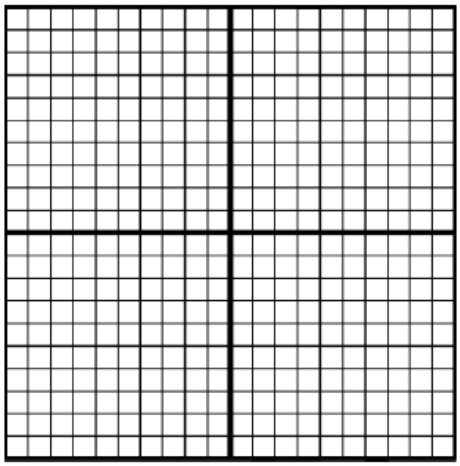
20. $x = 5$



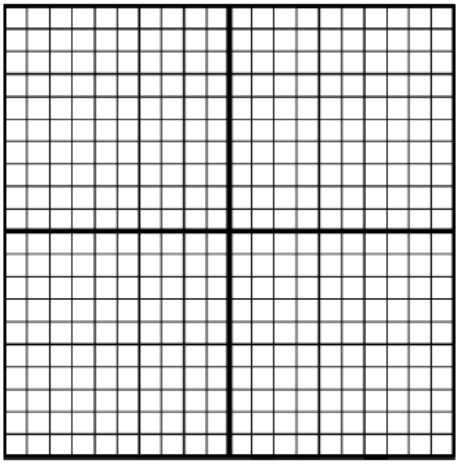
21. $y = \frac{5}{3}x$



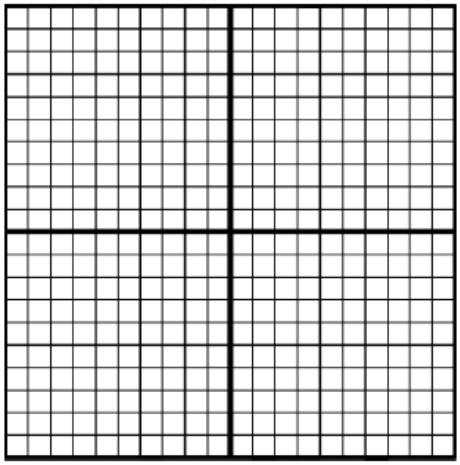
22. $y = -\frac{1}{3}x + 3$



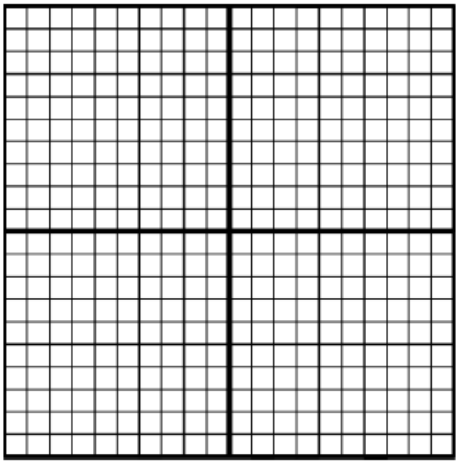
23. $y = \frac{1}{5}x - 4$



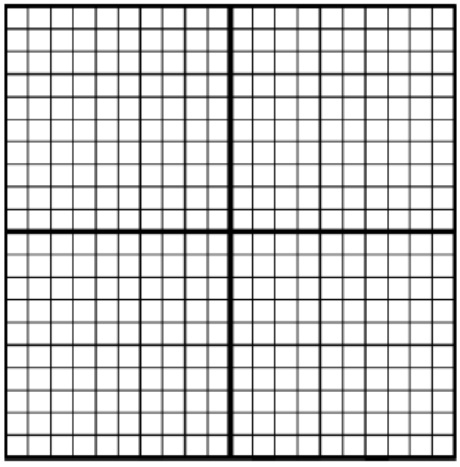
24. $y = -\frac{1}{2}x - 2$



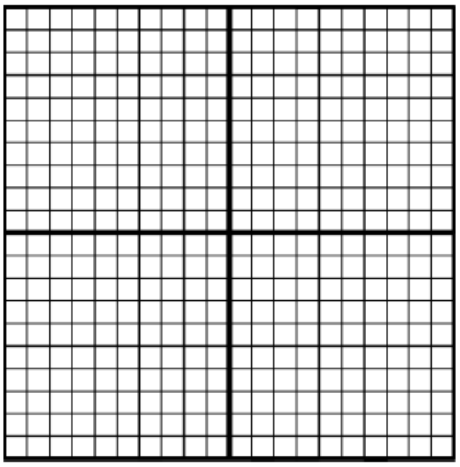
25. $y = 2x + 5$



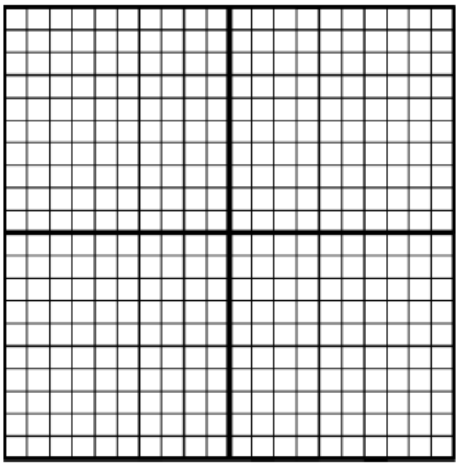
26. $x - 2y = 6$



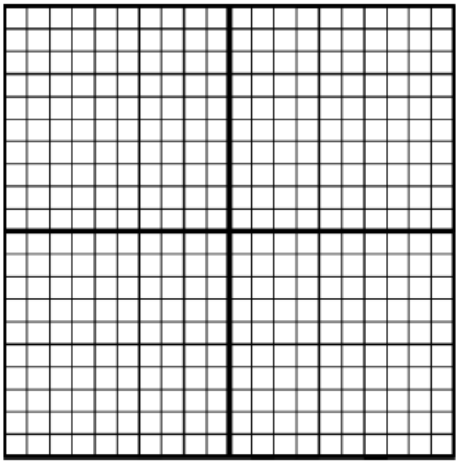
27. $3x - 2y = -2$



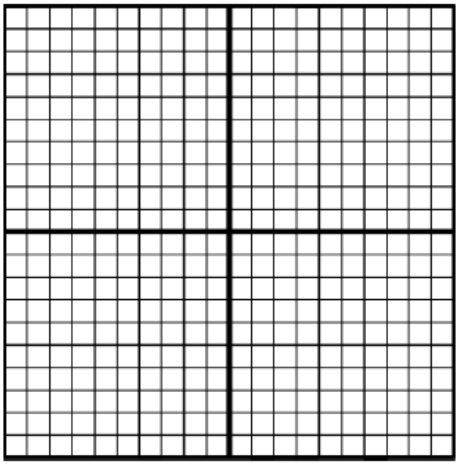
28. $3x + 2y = 4$



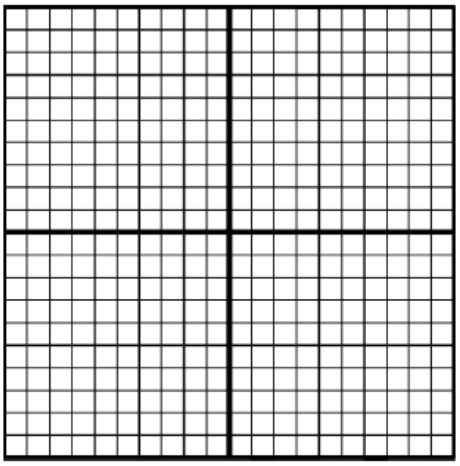
29. $x + 4y = 4$



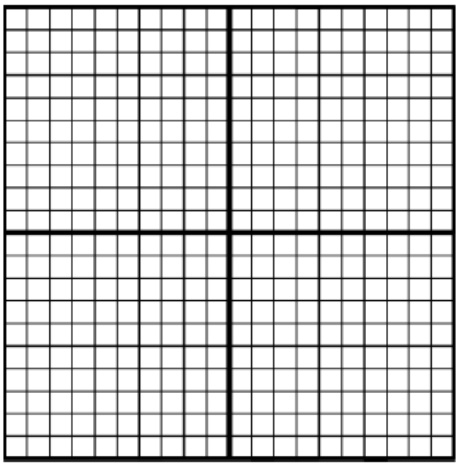
30. $4x + y = -1$



31. $5x + 2y = -10$



32. $x + 5y = 10$



Section 3: Writing Equations of Lines

Directions: Write the equation of the line that passes through the following points in slope intercept form. **Reminder:** Find the slope first ☺

33. $(0,1)\ and\ (7,14)$

34. $(-13,-4)\ and\ (1,4)$

35. $(-3,5)\ and\ (2,-13)$

36. $(11,31)\ and\ (25,36)$

37. $(-41,12)\ and\ (-10,-2)$

38. $(12,18)\ and\ (26,31)$

39. $(13, -17)\ and\ (-3,11)$

40. $(-5, -16)\ and\ (6,17)$

41. $(-4, -9)\ and\ (9, 18)$

42. $(19, -2)\ and\ (-4, 14)$

Directions: Write the equation of each of the following lines using the given slope and point. Write your final equation in standard form.

43. $through$: $(1, 2)\ slope = 7$

44. $through$: $(3, -1)\ slope = -1$

45. $through: (-2, 5)\ slope = -4$

46. $through: (3, 5)\ slope = \frac{5}{3}$

47. $through\ (2, -4)\ slope = 0$

48. $through\ (2, 5)\ slope = undefined$

49. $through\ (3, 1)\ slope = \frac{1}{2}$

50. $through\ (-1, 2)\ slope = 2$

Section 4: Solving Equations

Find the solution to each of the following equations. Remember, some equations may have no solution or infinite solutions.

51. $4(x + 10) = 50 + 2x$

52. $-12p + 39 = 11(p + 14)$

53. $-13n - 53 = -2(2n - 14)$

54. $8 + 10(6 - 11x) = -54 + 12x$

55. $5(x + 10) - 6x = x + 66$

56. $-11r + 11(6r + 4) = 44 + 10r$

57. $6n + 5(1 - 6n) = 2(1 - 13n) + 13$

58. $3(2x - 14) = -3(-13 + x)$

59. $2(5-8k)-13=9(1-k)-12$

60. $8(5+4n)+11=-5(3-7n)$

61. $7x-3x=-6(x+10)+5(-3-3x)$

62. $-9m+10(m+3)=-7(m-10)$

63. $-32-8m=-4(2m+8)$

64. $-2x+12=-2(x-6)$

65. $-4(v-2)=2(-2v+7)$

66. $3(a-7)=-9+3a$

Answer Key for Selected Problems

1. $10p - 1$

2. $12p - 5$

3. $6p^2 - 21p + 6$

4. $2p^3 + 6p^2 - 5p$

5. $9p^2 - 10p$

6. $-7p^2$

7. $4x^3 + 6x^2y - 2xy$

8. 0

9. $a^2 + 2b^2 - 3ac + 6bc$

10. $2xyz - 36xy - 20xz$

11. $-x^2$

12. $x + 18$

13. $-2x^3 - 6x^2y - 2xy$

14. $3ac + 4bc + 9c^2 + 2b^2 - 2ab$

***** Answers to #15 – 32 not included *****

33. $y = \frac{7}{3}x + 1$

34. $y = \frac{4}{7}x + \frac{3}{7}$

35. $y = -\frac{18}{5}x - \frac{29}{5}$

36. $y = \frac{5}{14}x + \frac{379}{14}$

37. $y = -\frac{14}{31}x - \frac{202}{31}$

38. $y = \frac{13}{14}x + \frac{204}{7}$

39. $y = -\frac{7}{4}x + \frac{23}{4}$

40. $y = 3x - 1$

41. $y = \frac{27}{13}x - \frac{9}{13}$

42. $y = -\frac{16}{23}x + \frac{258}{23}$

43. $-7x + y = -5$

44. $x + y = 2$

45. $4x + y = -3$

46. $-\frac{5}{3}x + y = 0$

47. $y = -4$

48. $x = 2$

49. $-\frac{1}{2}x + y = -\frac{1}{2}$

50. $2x + y = 4$

51. 5

52. -5

53. -9

54. 1

55. -8

56. 0

57. 5

58. 9

59. 0

60. 22

61. -3

62. 5

63. All Real Numbers

64. All Real Numbers

65. No Solutions

66. No Solutions