Name_____

2024-2025

# Rising 10th Grade Summer Math Work

<u>Directions:</u>

- Complete all pages of the attached packet.
- Show **all** of your work. Try to work <u>without</u> a calculator.
- You can get help from friends, family, or other sources, but do **not** use ChatGPT or PhotoMath. It's important that **<u>you</u>** understand the work because **<u>you</u>** need to understand this math for 8th grade.
- Email Nieves at snieves@bostongreenacademy.org if you find something confusing and I will help you find the right direction.
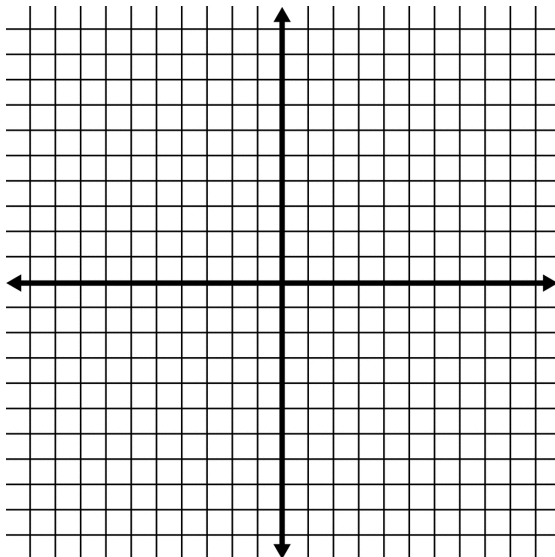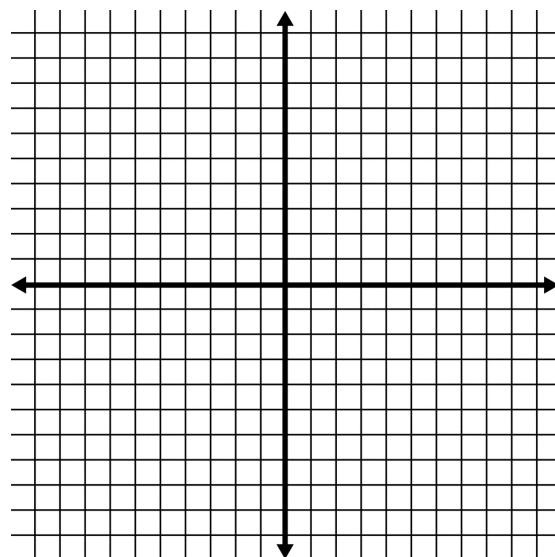
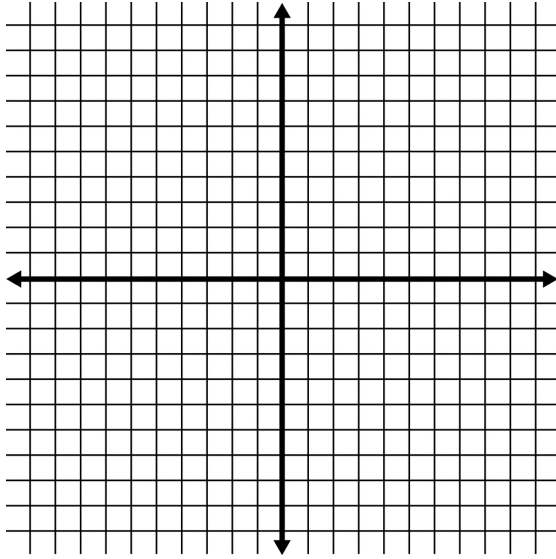## Graph each equation.

1. $2x + 4y = -3$
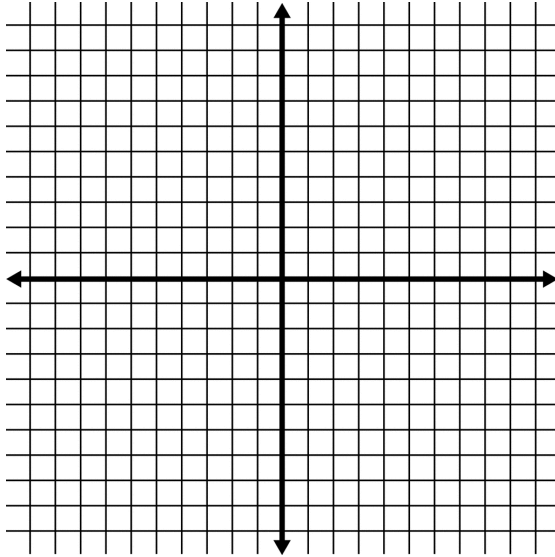
2. $-6y = 8 + 4x$
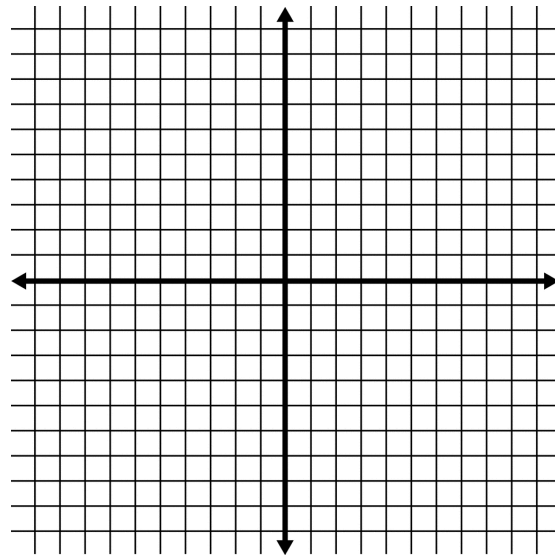
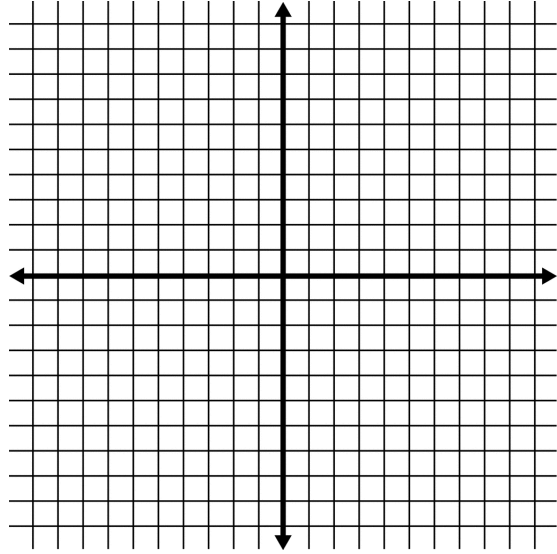3. $y = \dfrac{3}{11}x + \dfrac{10}{11}$

4. $5y = 8$

5. x - y > 7

6. 3x - y ≥ 3

Solve the following equations.

7. $24 = 31 - k$

8. $81 = n + 19 + 5$

9. $x + 12 = 4x - 9$

10. $\dfrac{z}{8} - 12 = 24$

11. $3(x - 4) = 15$

12. $3m + 7m - 2 = 12m + 19$

State whether the ratios are proportional. Write yes or no.

13. $\dfrac{48}{16}, \dfrac{11}{4}$

14. $\dfrac{1}{5}, \dfrac{3}{15}$

Solve each proportion

15. $\dfrac{15}{p} = \dfrac{20}{8}$

16. $\dfrac{4}{12} = \dfrac{v}{3}$

17. $\dfrac{w}{18} = \dfrac{2}{9}$

18. $\dfrac{280}{b} = \dfrac{490}{70}$

19. One group (A) contains 175 people. One-fifth of the people in group A will be selected to win free tickets to a concert. There is another group (B) in a nearby town that will receive the same number of tickets, but there are 585 people in that group. What will be the ratio of non-winners in group A to non-winners in group B after the selections are made?

20. The local election is over and a new mayor has been elected to lead Big Town. The new mayor received three votes for every vote received by her opponent. The new mayor received 2,058 votes. How many votes did her opponent receive?

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<u>Write the slope of the line passing through the two points.</u>

21. (-1, 7) & (1, 5)   22. (2, 2) & (6, 8)
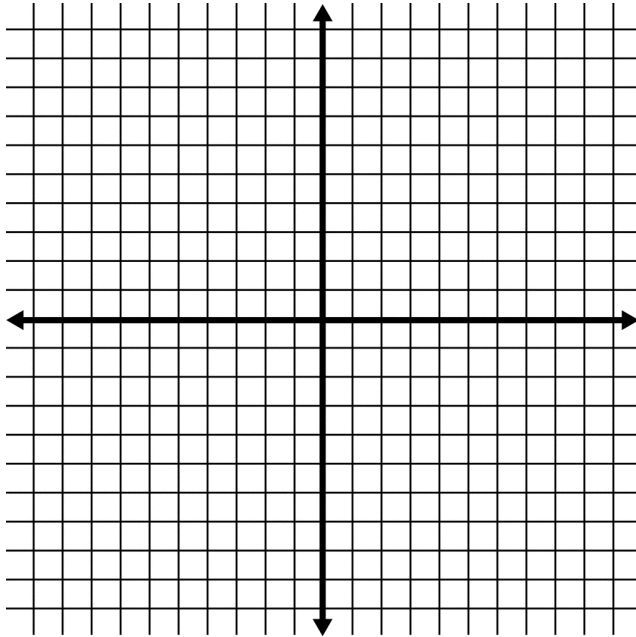
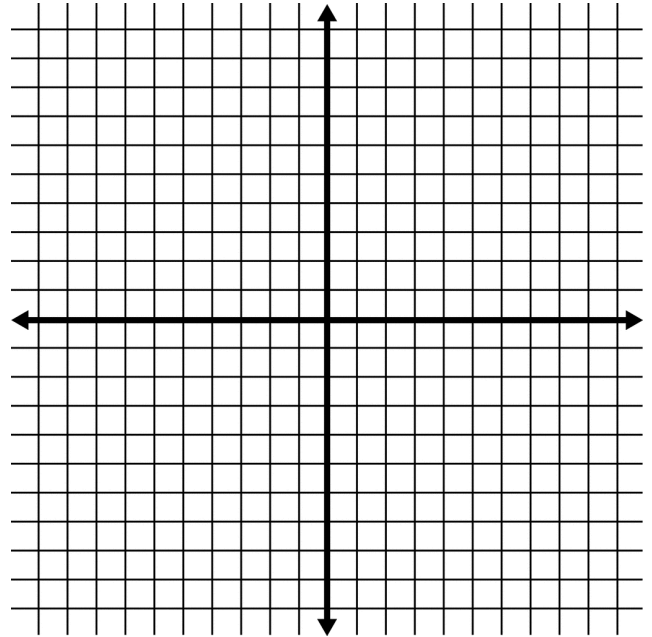23. (-34, -41) & (-26, 42)   24. (-7, 8) & (-4, -3)

Graph each line.

25. A line that passes through the point (0, 3). The line is parallel to another line whose slope is $\dfrac{-6}{5}$.

26. A line passes through the point (4, 0). Slope = ½

Simplify.

27. $34 + 36 \div 9 \times 20$

28. $66 \div (9 + 2) + 33 - 20 \div 10$

29. $(28 - 21 \div 7) \times (43 + 12 - 31)$

30. $(132 \div 11 + 2) - (17 \div 1 - 16)$

Translate the given statement into an equation and then solve.

31. 7 more than 2 times a number is 13

32. six times the sum of a number and 4 is 42

33. The sum of a number and eleven times the same number is 84.

34. One-sixth of a number is 66.

35. The sum of 10 and the product of 4 and a number is 22.

Simplify

36. $\sqrt{\dfrac{9}{25}}$

37. $6\sqrt{\dfrac{36}{196}}$

38. $12\left(\sqrt{225}\right)^2$

39. $\left(3\sqrt{36}\right)\left(-3\sqrt{49}\right)$

40. $\dfrac{2}{3}\sqrt{36} - \dfrac{3}{4}\sqrt{144}$

41. $\sqrt{847}\left(-12\sqrt{288}\right)$

Multiply.

42. (12x) (12x + 11)

43. -9x (-3x² + 9x + 11)

44. (8x + 11) (5x + 11)

45. (-14x + 11) (-9x + 19)

Fill in the missing numbers.

46. _____ ÷ _____ + _____ - _____ = 17
Use the numbers: 18, 44, 2, and 52

47. (___ - ___) x ___ (___ - ___) = 11,880
Use the numbers: 55, 13, 38, 2, and 7

48. ___ + ___ - ___ - (___ ÷ ___) = 73
Use the numbers: 8, 24, 72, 30, and 40

49. (___ + ___) + (___ - ___) = 73
Use the numbers: 1, 71, 3, and 25

Solve the equation. Write answer in simplest form.

50. $d + 13 = 13\dfrac{1}{16}$

51. $\dfrac{1}{2} + \dfrac{5}{6} = k + \dfrac{1}{3}$

52. $8n = 55\dfrac{1}{3}$

53. $\dfrac{6j}{8} = \dfrac{3}{10}$

Plot the following points on the coordinate grid.

54. A (0, -8)

55. B (-5, 0)

56. C (3, 10)

57. D (6, -7)

58. E (-1, 9)

59. F (-2, -5)

60. G (4, 1)