

Algebra 2

2026-2027 Summer Math Assignment

All assignments are due the first day of school on Thursday, July 30 by the end of the day at 3:30 pm for fall and spring courses.

- A] Refer to your Algebra 1 notebook, the internet, or the sheets/links provided for assistance.
- B] Do not wait until the last minute to complete this assignment. Begin the assignment in a timely manner to allow yourself enough time to review concepts you may have forgotten.
- C] Label your assignment with the following: first name, last name, course, teacher and block.
- D] Write neatly and in pencil and organize and number all work on your own paper.
- E] Show your work (step-by-step solutions) on problems requiring calculations to receive full credit. Round decimal answers to the nearest thousandth. Circle your final answers.
- F] Do your own work and complete all problems. We are on an honor system and would like for you to take ownership of your work.
- G] Place a question mark next to problems you have difficulty with computing. Watch a video for review.
- H] Draw graphs on graph paper with points plotted.
- I] Staple multiple pages together in the correct order.
- J] Turn in the completed assignment on time to a math teacher on the first floor of building. For your convenience, containers will be placed outside of the classroom door for collection.

The answer key will be posted a week before school starts. Please use it to check your assignment before the first day of school. A test on this material will be given during the first two weeks of school. This test will be the first grade of the course in the first nine weeks for 2026-2027 school year.

If you know that you will not be attending school on the first day, please email the teacher clear pictures of your summer math assignment by the deadline and turn in the paper assignment when you attend.

Solve.

1. $\frac{2}{3} + x = -\frac{5}{2} - \frac{5}{6}$

2. $\frac{2}{3}x + \frac{3}{2}x = x + \frac{9}{2} - \frac{1}{2}x$

Solve each equation for the indicated variable.

3. $A = \frac{bh}{2}$, for b

4. $A = \pi r^2$, for r

5. $P = 2w + 2l$, for w.

Solve.

6. $\frac{27}{4} = \frac{m}{4}$

7. $\frac{x}{4} = \frac{9}{x}$

8. $\frac{7}{2} = \frac{a+3}{5}$

9. $\frac{x-2}{3} = \frac{2x+8}{6x}$

Solve.

10. $7 + 8y > 2y - 12$

11. $\frac{7^5}{7^3}$

12. $\left(\frac{4}{3}\right)^{-2}$

13. $(x^4y^3)(x^5y)$

14. $(-2x^5y^6)^3$

15. $\frac{3a^2x^3}{18a^4x^2}$

Multiply.

16. $(x + 5)(x - 3)$

17. $(2x - 5)(3x - 7)$

18. $(x - 4)(x + 4)$

19. $(2x - 6)(2x + 6)$

20. $(x + 9)^2$

21. $(4x - 11)^2$

Factor the polynomials.

22. $x^2 - 49$

23. $4a^2 - 36$

24. $x^2 + 8x + 16$

25. $n^2 - 2n + 1$

Simplify each radical expression.

**Leave your answers in the simplest radical form!!!* (No decimals and no radicals in any denominators.)*

29. $\sqrt{27}$

30. $\sqrt{48}$

31. $\sqrt{\frac{9}{16}}$

32. $10\sqrt{5} + 3\sqrt{5}$

33. $\sqrt{80} - \sqrt{45}$

34. $(3\sqrt{3})(7\sqrt{6})$

Solve by the quadratic formula.

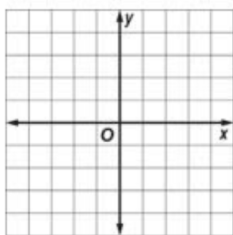
37. $3x^2 + 8x + 2 = 0$

38. $5x^2 + 3x - 16 = 0$

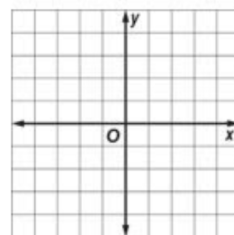
For each of the following equations or inequalities:

- a) identify the slope
- b) identify the x- and y-intercept
- c) graph

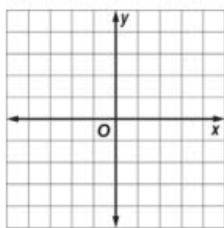
39. $y = x - 2$



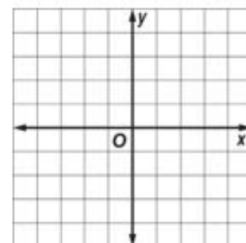
40. $5y + 2x = 10$



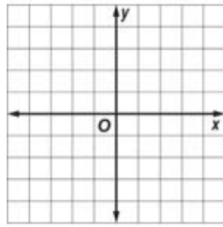
41. $2y + 4x = 14$



42. $x = 4$



43. $y = -5$



Find the slope of the line that passes through the following points.

44. (6, 8) & (-2, -4)

45. (5, 1) & (-1, 1)

Write the slope-intercept form of the equation of each line.

46. $3x - 2y = -16$

47. $6x + 5y = -15$

Write the equation of a line in point-slope form with the given conditions.

48. Parallel to $y = 2x - 10$ and passes through (4, 2).

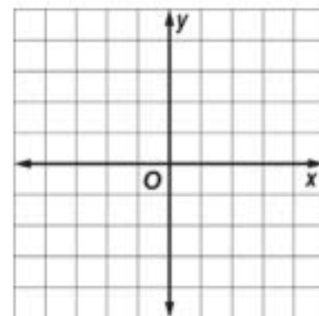
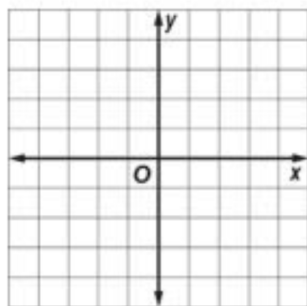
49. Perpendicular to $y = \frac{2}{3}x + 8$ and passes through (-3, 7).

Solve each system by graphing.

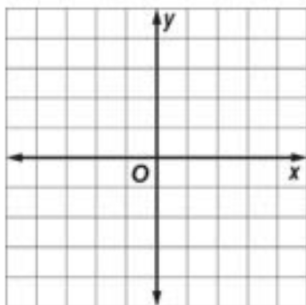
You must use the graphing calculator in order to complete these problems. Reminder, write answers as improper fractions (where necessary).

50. $y = -3x + 5$
 $y = 2x + 10$

51. $x + y = 6$
 $x - y = 4$



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



Solve each system by either substitution or elimination method.

53. $y = 7x + 5$
 $y = 4x - 10$

54. $2x + 5y = 2$
 $3x - 2y = 3$

55. $x - y = 9$
 $3x + y = 11$