

**Pre – AP Algebra 1/Rising Grade 9
Summer 2026 Math Packet**



Name: _____

DUE ON THE FIRST DAY OF SCHOOL

The exercises included in the summer packets aim to assist you in revisiting important topics from your previous math courses, which are crucial for your success in the upcoming math class. It is required that you bring the completed packet to school on the first day of classes, and it will contribute to **your grade for the first quarter**. In addition, you will be **ASSESSED** on the material covered in the packet upon your return. To ensure you receive maximum credit, it is essential to **SHOW YOUR WORK** clearly and neatly.

Evaluate.

1. $xy - y^2$ when $y = 3$ and $x = 5$.

Solve the equation.

2. $3 - 4z = -5 + 8z$

3. $3x - 3 = x + 4$

4. $7x - 29 - 21x = 3 - (12 + 2x)$

5. $\frac{2 - 7x}{x - 1}$ when $x = 6$

4. $18.3y - 7.6 = 8.4y - 14.6$

Decide whether the statement is true or false.

5. 2% of 9 is 1.8

Solve.

6. $5 + 3(m + 4) = 50$

7. $8 - 6r = 4r + 1$

8. $\frac{15}{y} = \frac{12}{y - 2}$

9. $3x^2 - 4x - 7 = 0$

10. $p = \sqrt{-3p + 18}$

11. Order the numbers from least to greatest.

$$-\sqrt{38}, -6, -\frac{32}{5}, -6.1$$

12. Evaluate the function $f(x) = -\frac{3}{5}x + 2$ when $x = 3$, $x = 0$, and $x = -4$

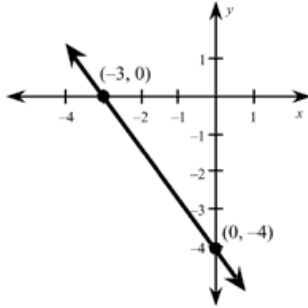
13. Find the x -intercept of the line with the equation $3x - 4y = 12$.

14. Rewrite the equation $\frac{1}{3}x - 2y + \frac{2}{3} = 0$ in slope-intercept form.

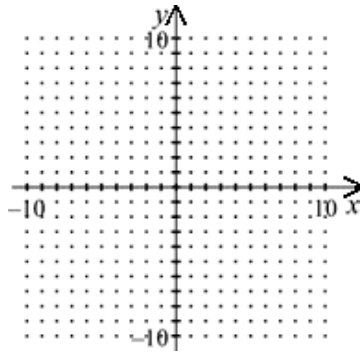
15. Write an equation of the line with slope $-\frac{1}{3}$ and y -intercept -3 .

16. Find the y -intercept of a line that passes through $(-6, -1)$ and has a slope of $\frac{5}{7}$.

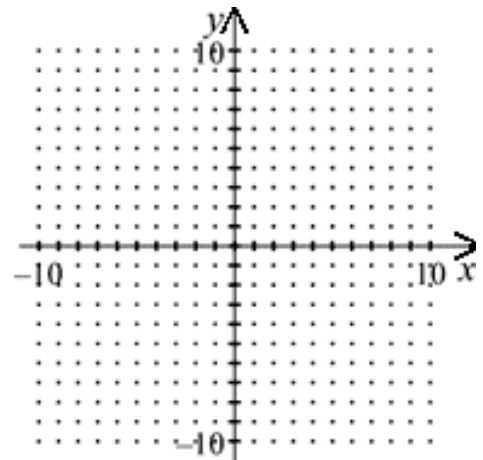
17. Write an equation of the line shown on the graph.



18. A line passes through the point $(-1, -3)$ and has a slope of 4. Sketch the line and write its equation in slope-intercept form.



19. A line passes through the point $(-1, -3)$ and has a slope of $\frac{3}{2}$. Sketch the line and write its equation in slope-intercept form.



20. Write the equation of the line in slope-intercept form that passes through the points $(7, -1)$ and $(2, 8)$.

Write an equation in point-slope form of the line that passes through the given points.

21. $(-1, -8), (4, -6)$

22. Write the standard form of the equation of the line with slope -1 passing through the point $(-4, -6)$.

Write an equation in standard form of the line that passes through the given point and has the given slope m or that passes through the two given points.

23. $m = -7, (5, 4)$

Simplify the expression using positive exponents.

24. $\frac{4^{10}}{4^5}$.

25. Evaluate $-5 \cdot 4^0$.

26. Rewrite using only positive exponents: $3a^2b^{-2}c^{-3}$

27. Rewrite the expression using positive exponents. $(-3)^0(2x^{-1}y^{-1})^2$

28. Rewrite the expression using positive exponents. $5AB^{-2}$

29. Rewrite the expression using positive exponents. $\frac{-3^0}{4x^{-3}}$

30. **Solve the equation. Check your solution.**

$$-6x + 9 = -21$$

31. **Solve the equation. Check your solution.**

$$-8y + 5 + 2y = -37$$

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

32. $(-3, -2)$ and $(0, 0)$

33. $(-2, 1)$ and $(5, 1)$

34. $(0, 4)$ and $(6, -2)$

Find the product.

35. $(x + 3)(x + 2)$

36. $(2x + 1)(x + 3)$

37. $(x + 2)(x - 2)$

38. $(x+5)^2$

Simplify the expression. Write your answer as a power.

39. $5^3 \cdot 5^6$ 40. $b^7 \cdot b^{11}$ 41. $\frac{c^{12}}{c^8}$

Evaluate the expression.

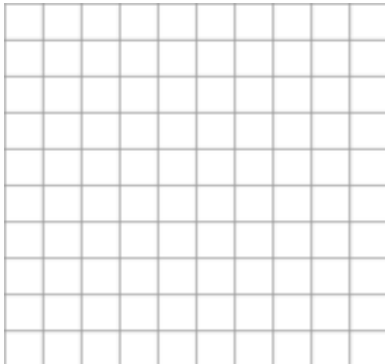
42. 5^{-2} 43. $(-3)^0$

Simplify. Write the expression using only positive exponents.

44. $\frac{b^{-3}}{b^7}$

Graph and check to solve the linear system.

47. $-x + y = 3$
 $x + y = 5$



Use the substitution method to solve the linear system.

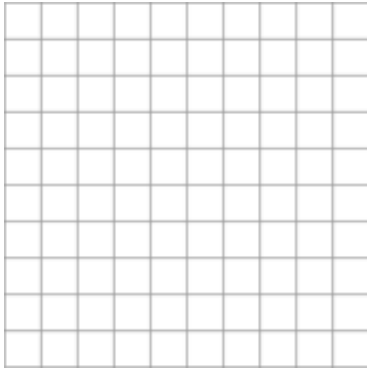
48. $y = x + 2$
 $3x + 2y = 9$

Solve the linear system using elimination.

49. $x + y = 5$
 $x - y = 3$

Graph the system of linear inequalities.

50. $y \geq -2$
 $x < 2$



Write the following quadratic functions as the product of two linear factors.

51. $f(x) = x^2 - 7x + 12.$

52. $f(x) = x^2 + 2x - 35.$

53. Find the minimum value of the parabola $y = 3x^2 - 7.$

54. Find the vertex of the parabola $y = -4x^2 + 10x.$

55. Find the y-intercept of the parabola $y = \frac{22}{5}x^2 + \frac{3}{4}.$

56. Find the equation of the axis of symmetry for the parabola $y = -x^2 - 4x + \frac{9}{2}.$