

Name: _____

Summer Packet for students entering Algebra 2: Due 8/28/17

Show all work underneath each question.

Record all final answers on the final answer sheet.

Part 1 - Algebra 1, Chapter 1-2

1. Write a verbal expression for $4r + 9$.
2. Write an algebraic expression for *the difference of 5 and n cubed*.
3. Evaluate $2x + 5y^2 - 3z$ if $x = 6$, $y = 4$, and $z = 7$.

For Questions 4-6, simplify each expression.

4. $2t^2 + 5t^2 + 3t$

5. $7(r + 2t) - 5t$

6. $5(4a + b) + 3a + b$

7. Find the solution set for $3b - 4 = 8$ if the replacement set is $\{1, 2, 3, 4, 5\}$.

For Questions 8-9, determine whether each relation is a function.

8. $\{(1, 5), (2, 4), (3, 5), (4, 9)\}$

9. $x = -2$

10. If $f(n) = 6 - 2n$, find $f(-1)$.

11. Draw a reasonable graph showing the relationship between the temperature of a pizza as it is removed from an oven and placed on a counter at room temperature, and time.

12. The sides of an equilateral triangle measure $(2x + 4)$ units.
What is the perimeter?

13. Translate $m^2 - 4 = 2r + 1$ into a sentence.

14. Write a problem based on the given information.
 h = the height of a math textbook;
 $h + 2$ = the height of a science textbook
 $4h + 2(h + 2)$

Solve each equation.

15. $m - 5 = -23$

16. $-4 = 8 + k$

17. $\frac{a}{2} + 9 = 30$

18. $-\frac{2}{7}x = -16$

19. $5(c + 3) = 15 + 2(2c - 1)$

20. $10(a + 1) - 14a = 9 - (4a - 1)$

21. $\frac{7}{10} = \frac{3}{x + 1}$

For Questions 24 and 25, evaluate each expression if $a = 3$, $b = 4$, and $c = 9$.

22. $2|a - b| + |c|$

23. $c - b|1 - a|$

24. Solve $|2x - 1| = 5$. Then graph the solution set.

25. Determine whether $\frac{4}{9}$ and $\frac{20}{45}$ are equivalent ratios. Write *yes* or *no*.

26. A magazine is on sale for 15% off the original price. If the original price of the magazine is \$4.60, what is the discounted price?

27. Solve $\frac{t - v}{r} = k$, for v . Write your answer as an equation.

28. How many pounds of peanuts costing \$3.00 a pound should be mixed with 4 pounds of cashews costing \$4.50 a pound to obtain a mixture costing \$3.50 a pound?

Part 2 - Algebra 1, Chapter 3-6

29. Graph $3x - y = 1$.

30. Solve $4x + 9 = 4x + 13$.

31. Find the value of r so that the line through $(2, -3)$ and $(-4, r)$ has a slope of $-\frac{1}{2}$.

32. Write an equation of the line whose slope is 2 and whose y -intercept is 9.

33. Write an equation of the line that passes through $(-1, -7)$ and $(1, 3)$.

34. Write $y - 4 = -\frac{3}{2}(x + 6)$ in standard form.

35. Write the slope-intercept form of an equation of the line that passes through $(-2, 0)$ and is parallel to the graph of $y = -3x - 2$.

36. The table below shows the cost to ride the New York City subway in various years.

Year	1985	1987	1990	1994	2000	2007
Subway Fare	\$0.90	\$1.00	\$1.15	\$1.25	\$1.50	\$2.00

Use a regression line to estimate the cost of a subway ride in 2014.

Solve each inequality.

37. $4x - 5 < 7x + 10$

38. $2(5a - 4) - 3(6 + 2a) \leq 6$

Solve each compound inequality.

39. $5 < 2t + 7 < 11$

40. $13 < 4 - 3v$ or $2v - 14 > 8$

For Questions 16 and 17, solve each open sentence.

41. $|3b - 5| \leq 7$

42. $|w + 5| > 1$

43. Determine whether the system $x - y = 4$ and $y = x$ has *no* solution, *one* solution, or *infinitely many* solutions.

For Questions 44-47, solve the system of equations.

44. $x + y = 2$
 $y = 2x - 1$

45. $-x - 5y = 7$
 $x + y = 1$

46. $3x + y = 26$
 $3x + 3y = 18$

47. $4x - 8y = 52$
 $7x + 4y = 1$

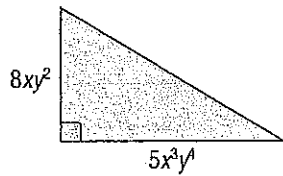
48. What is one specific characteristic that all parallel lines will have?

49. Solve the system of inequalities by graphing.

$$\begin{aligned}2x - y &> 3 \\ x + 2y &\leq 4\end{aligned}$$

Part 2 - Algebra 1, Chapter 7-8

50. Express the area of the triangle as a monomial.



51. Simplify $\frac{(3b^{-4}g^3)^{-2}}{(4b)^2}$

52. Solve $12^{3x-1} = 144$.

53. Solve $(3.4 \times 10^5)(7.5 \times 10^{-9})$. Write your answer in both standard and scientific notation.

54. Simplify $(4a - 2b + c) - (5c + a - 4b)$.

55. Solve $x(x - 3) = x(x + 5) - 16$.

Find each product.

56. $(p - 3)(p + 5)$

57. $(a + 2)(a^2 - 3a - 7)$

58. $(5t + r)^2$

59. $(3k - 1)(3k + 1)$

Factor.

60. $4p^2r - 16pr + 8pr^2$

61. $m^2 - 11m + 18$

62. $3a^2 - 13a + 12$

63. $27r^2 - 12t^2$

64. The area of a square is $4p^2 - 4p + 1$ square inches. What is the length of the side of the square?

Solve each equation.

65. $22y^2 = -11y$

66. $h^2 - 13h + 36 = 0$

67. $5a^2 - 33a = 14$

68. $m^2 + 81 = -18m$

Name: _____

Final Answer Sheet:

Please use your best handwriting to record your final answers.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

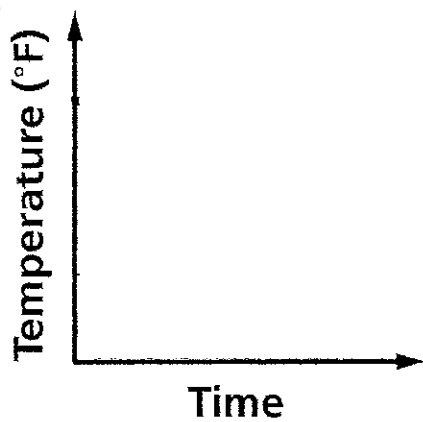
7. _____

8. _____

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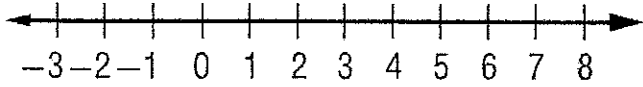
20. _____

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25. _____

26. _____

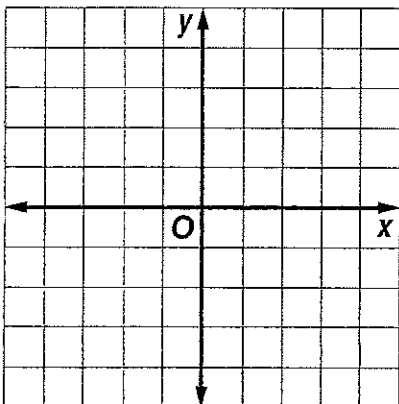
27. _____

28. _____

_____ lbs. of peanuts

_____ lbs. of cashews

29. _____



30. _____

31. _____

32. _____

33. _____

34. _____

35. _____

36. _____

37. _____

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41. _____

42. _____

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44. _____

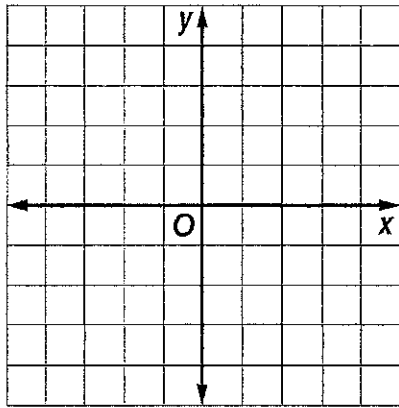
45. _____

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Scientific Notation:

Standard:

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