Name: _____ Date: _____

Algebra I Summer Packet: DUE FIRST DAY OF SCHOOL (Daily Grade)

This packet is required for all rising Algebra I students and is a review of topics covered in your previous math courses. You must master these skills BEFORE taking Algebra I.

During the first week of school, you will be given a **quiz** over integer rules. (adding, subtracting, multiplying, and dividing integers) Please make sure you practice operations with integers over the summer.

I have created a class in DeltaMath and have linked additional practice problems. These Delta Math practice problems are **optional**; however, they will help you prepare for your operations with integers quiz.

Delta Math code: **J99A-3CE6**

** Sample Problems you may find helpful in completing this packet:

Adding Integers-

- Same Signs → 1) Add the absolute values
  Ex: $-2+(-4)=(-6)$ 2) Keep the sign
- Different signs → 1) Subtract
  Ex: $-7+4=(-3)$ 2) Take the sign of the # with the larger absolute value.

Subtracting Integers-

1) KCC → Keep, Change, Change
2) Follow addition rules

Ex: $-4-(-6)=$

$-4+6=(2)$

Multiply/Divide Integers-

- Same signs = positive #
- Different signs = negative #

Ex: $-4(-8)=(32)$

Ex: $\frac{24}{-3}=(-8)$

Add/Subtract Fractions-

Get a common denominator + add/subtract the numerators.

$1\frac{3}{4}+\frac{2}{3}=$ (make improper)

$\frac{7}{4}\ \frac{21}{12}$

$+\ \frac{2}{3}\ \frac{8}{12}$

$\frac{29}{12}$ OR $2\frac{5}{12}$

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Evaluate Expressions:

$x = 3$, $y = 4$

$4x^2 - 5y + 7$

$4(3^2) - 5(4) + 7$

$4(9) - 20 + 7$

$36 - 20 + 7$

$16 + 7$

23

Distributive Prop. / Combining Like Terms:

$-2(x-4) + 3x - 12$

$-2x + 8 + 3x - 12$

$x - 4$

Proportions – (cross multiply then divide)

$\frac{3}{8} = \frac{x}{4}$

$\frac{8x}{8} = \frac{12}{8}$

$x = 1.5$

Equations – (Use inverse operations to isolate the variable.)

$24 = \frac{x}{-2} + 10$

$\underline{-10} \quad \underline{-10}$

$14 = \frac{x}{-2}$

$-2 \cdot 14 = \frac{x}{-2} \cdot -2$

$x = -28$

Inequalities – (Solve like an equation, but flip symbol if x/÷ by a negative #)

Ex: $-2x + 4 \geq 6$

$\underline{-4} \quad \underline{-4}$

$-2x \geq 2$

$\frac{-2x}{-2} \geq \frac{2}{-2}$

Flip symbol!

$x \leq -1$

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Algebra Summer Math Packet

1. Compute:

$$(-6) + (-7)$$

2. Compute:

$$8 + (-5)$$

3. Compute:

$$-2 + 10$$

4. Compute:

$$(-6) + (-9)$$

5. Compute:

$$1 - (-12)$$

6. Compute:

$$-3 - 8$$

7. Compute:

$$-7 - (-9)$$

8. Compute:

$$5 - (-6)$$

9. Compute:

$$(-11) - 5$$

10. Compute:

$$-10 + 7$$

11. Compute:

$$7 - 11$$

12. Compute:

$$-2 + (-7)$$

13. Compute:

$$-11 - 1$$

14. Compute:

$$(-8) - 5$$

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15. Divide.

$$-56 \div 7$$

16. Multiply.

$$7 \times -5$$

17. Divide.

$$-28 \div 4$$

18. Multiply.

$$10 \times -3$$

19. Divide.

$$-48 \div -8$$

20. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$\frac{2}{15} - \frac{11}{12}$$

21. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$\frac{1}{9} + \frac{7}{6}$$

22. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$\frac{11}{6} + \left(-\frac{5}{8}\right)$$

23. Evaluate the expression shown below and write your answer as a fraction or mixed number in simplest form.

$$-\frac{2}{3} - \frac{2}{7}$$

24. Perform the operation below. Express your answer as a mixed number in simplest form.

$$2\frac{3}{5} + 4\frac{3}{4}$$

25. Perform the operation below. Express your answer as a mixed number in simplest form.

$$4\frac{1}{4} - 1\frac{2}{3}$$

26. Perform the operation below. Express your answer as a mixed number in simplest form.

$$-3\frac{2}{5} - \left(-1\frac{1}{2}\right)$$

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27. What is the value of the expression $7x^2 - 2x + 2$ when $x = 3$?

28. What is the value of the expression $x^2 + 10x + 3$ when $x = 6$?

29. What is the value of the expression $10x - 4y$ when $x = 8$ and $y = 7$?

30. Which expression is equivalent to $3w - 4 - w - 9$?

A. $2w - 13$ B. $4w - 13$

C. $2w + 5$ D. $-w - 10$

31. Which expression is equivalent to $-7c + 9 - 8c + 1$?

A. $10 - 15c$ B. $2c - 7$

C. $c + 8$ D. $c + 10$

32. Which expression is equivalent to $7h - 5 - 4h - 7$?

A. $-9h$ B. $11h - 12$

C. $3h - 12$ D. -9

33. Which expression is equivalent to $-6n + 3 + 8n - 4$?

A. $-14n + 7$ B. $2n - 1$

C. 1 D. n

34. Use the distributive property to write an equivalent expression.

$$2(3x - 7y + 3)$$

35. Use the distributive property to write an equivalent expression.

$$7(2p + 2q)$$

36. Use the distributive property to write an equivalent expression.

$$5(6v + 10)$$

37. Rewrite in simplest terms: $-2(-10v + 1) - 6v$

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38. Rewrite in simplest terms: $2r - 3(5r - 8)$

39. Rewrite in simplest terms:
$9(m - 9) - 4(10m + 2)$

40. What value of x is the solution to the equation below?

$$12 = x - 3$$

41. What value of x is the solution to the equation below?

$$-9 = 18 + x$$

42. What value of x is the solution to the equation below?

$$-17 + x = 3$$

43. What value of x is the solution to the equation below?

$$9x = -36$$

44. What value of x is the solution to the equation below?

$$7 = \frac{x}{-7}$$

45. Solve for n and simplify your answer.

$$\frac{4}{5}n = 10$$

46. Solve for a.

$$-7a + 28 = 7$$

47. Solve for b.

$$6b - 11 = -23$$

48. Solve for c.

$$-35 - 2c = -27$$

49. Solve for c.

$$61 = -9c + 7$$

50. Solve for x.

$$42 = -\frac{x}{7} + 29$$

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51. Solve for c.

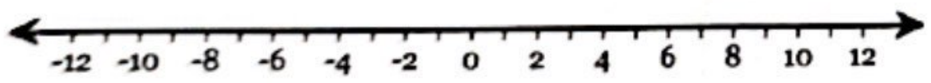
$$3 + \frac{1}{4}c = 23$$

52. Solve. $9(y - 4) = 27$

53. Solve. $2(3y - 9) = 18$

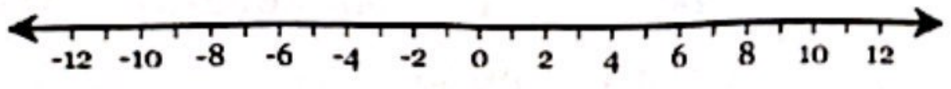
54. Solve for x and graph the solution on the number line below.

$$x - 9 \leq -4$$



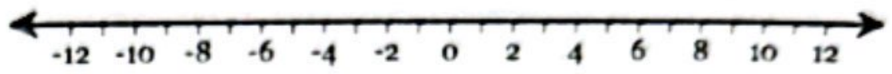
55. Solve for x and graph the solution on the number line below.

$$\frac{x}{2} \geq -3$$



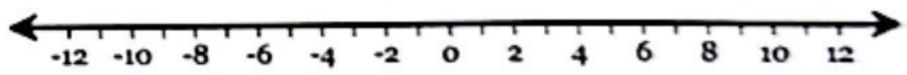
56. Solve for x and graph the solution on the number line below.

$$64 > -8x$$



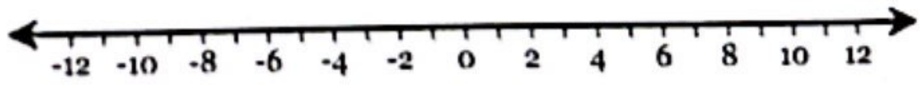
57. Solve the inequality and graph the solution on the line provided.

$$8x - 16 > -8$$



58. Solve the inequality and graph the solution on the line provided.

$$3x + 9 \geq -15$$

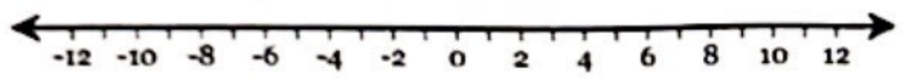


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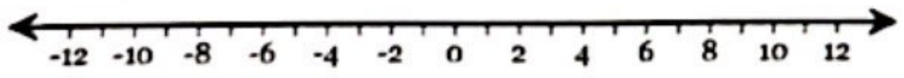
59. Solve the inequality and graph the solution on the line provided.

$$-19 + 6x \leq 23$$



60. Solve the inequality and graph the solution on the line provided.

$$5 + 7x < -51$$



61. Solve the inequality and graph the solution on the line provided.

$$8x - 4 \geq -68$$



62. Solve for x.

$$-\frac{25}{2} = \frac{x}{4}$$

63. Solve for x.

$$-\frac{6}{7} = \frac{12}{x}$$

64. Solve for x.

$$\frac{x}{18} = -\frac{2}{9}$$

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