Entering Algebra 1
Summer Homework



Name

_____

Please read all instructions before beginning this packet.

Show all work directly in this packet.
If you need additional space, use lined paper and clearly label each problem.
Submit the completed printed packet when you return to school in August.

To maintain your academic progress, the math department at CSN expects you to spend approximately one hour per week working on these problem sets. Most problems can be completed without a calculator, but use when necessary.

Your grade will be based on:

- Completion
- Accuracy
- A beginning-of-year assessment given during the first week of school

Please give your best effort. This work helps reflect your individual strengths and areas for growth, and it also allows the department to analyze overall student performance. Teachers will use this information to adjust instruction and better support your learning.

Please reach out to your teacher or the department chair with any questions or concerns.

1. Write the numbers below in order from least to greatest. Use commas to separate.

$\boxed{-19}$ $\boxed{0}$ $\boxed{12}$ $\boxed{-8}$ $\boxed{-13}$ $\boxed{-1}$

2. Write the numbers below in order from least to greatest. Use commas to separate.

$\boxed{13}$ $\boxed{-11}$ $\boxed{-1}$ $\boxed{-12}$ $\boxed{-10}$ $\boxed{9}$

3. Write the numbers below in order from least to greatest. Use commas to separate.

$\boxed{4.4}$ $\boxed{-15.8}$ $\boxed{0.6}$ $\boxed{-3.6}$ $\boxed{-3.2}$ $\boxed{-13.1}$

4. Write the numbers below in order from least to greatest. Use commas to separate.

$\boxed{-19.2}$ $\boxed{-19.6}$ $\boxed{10.6}$ $\boxed{1.6}$ $\boxed{-1.6}$ $\boxed{-13.5}$

5. Compute:

$$-7 + (-5)$$

6. Compute:

$$(-8) - (-10)$$

7. Look at the expression below. Do not solve. State if the answer would be positive, negative, or zero, and explain why.

$$4 \div -16$$

The answer would be _____ (word bank 1) because this is a _____ (word bank 2) problem and _____ (word bank 3).

This word bank also applies to question 8.

Word bank 1: **(a)** negative, **(b)** positive, **(c)** zero

Word bank 2: **(a)** multiplication, **(b)** addition, **(c)** subtraction, **(d)** division

Word bank 3: **(a)** zero divided by anything is zero, **(b)** both numbers are negative, **(c)** anything times zero is zero, **(d)** both numbers are positive, **(e)** one number is positive and one number is negative

8. Look at the expression below. Do not solve. State if the answer would be positive, negative, or zero, and explain why.

$$-20 \times -1$$

The answer would be _____ because this is a
word bank 1

_____ problem and
word bank 2

_____.
word bank 3

9. Simplify the expression below using order of operations.

$$5 + (8 \times 6) - (-9)$$

10. Simplify the expression below using order of operations.

$$-6 \times 7 \div 3 + (-4)$$

11. Simplify the expression below using order of operations.

$$-3 - \frac{-8 + (-4)^2}{2}$$

12. Simplify the expression below using order of operations.

$$4 \times (-9) + (-10) - 5^2$$

13. Convert $4\frac{1}{6}$ into an improper fraction.

14. Convert $\frac{85}{9}$ into a mixed number.

15. Solve. Express your answer as a fraction.

$$\frac{7}{10} - \frac{2}{10}$$

16. Solve. Express your answer as a fraction.

$$\frac{1}{10} + \frac{9}{10}$$

17. Rewrite the 2 fractions below with a common denominator.

$$\frac{11}{12} \qquad \frac{13}{18}$$

18. Rewrite the 2 fractions below with a common denominator.

$$\frac{1}{2} \qquad \frac{1}{9}$$

19. Perform the operation and simplify the answer fully.

$$\frac{4}{9} \cdot \frac{4}{5}$$

20. Perform the operation and simplify the answer fully.

$$\frac{7}{5} \div \frac{5}{6}$$

21. Perform the operation and reduce the answer fully. Make sure to express your answer as a simplified fraction.

$$\frac{2}{3} \cdot \frac{3}{8}$$

22. Perform the operation and reduce the answer fully. Make sure to express your answer as a simplified fraction.

$$-\frac{1}{2} \div -\frac{5}{2}$$

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

$$\frac{3}{23} - \frac{11}{23}$$

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

$$\frac{1}{12} + \frac{2}{9}$$

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

$$-\frac{1}{6} + \left(-\frac{11}{10}\right)$$

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

$$-\frac{7}{2} - \left(-\frac{8}{7}\right)$$

27. Circle all the factors of 6 in the hundreds chart below.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

28. Circle all the factors of 50 in the hundreds chart below.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

29. Simplify the expression below using order of operations.

$$2 \times (6 + 8) - 7$$

30. Simplify the expression below using order of operations.

$$8 + 1 \times 8 \times 4$$

31. Write the numbers below in order from least to greatest. Use commas to separate.

1.1	0.7	0.3	6.3	6.8	7.1

32. Write the numbers below in order from least to greatest. Use commas to separate.

4.2	7.6	6.7	4.7	3.7	7.3

33. Write the numbers below in order from least to greatest. Use commas to separate.

16.2	16.90	16.01	16.09	16.23	16.32

34. Write the numbers below in order from least to greatest. Use commas to separate.

14.90	14.6	14.87	14.09	14.68	14.04

35. Round 2.88 to the nearest whole number.

36. Round 6.7539 to the nearest hundredth.

37. What is the greatest common factor of 36, 18, and 42?

38. What is the greatest common factor of 50 and 40?

39. What is the least common multiple of 5, 9, and 15?

40. What is the least common multiple of 9 and 15?

41. Write a multiplication expression with factors of 12 and some number c.

42. Write an expression for 17 take away some number y.

43. Represent the following sentence as an algebraic expression, where "a number" is the letter x.

A number is subtracted from 8.

44. Represent the following sentence as an algebraic expression, where "a number" is the letter x.

Six times a number.

45. What is the value of the expression $4w^2 + 6w + 4$ when $w = 2$?

46. What is the value of the expression $9z + 3$ when $z = 9$?

47. Which expression is equivalent to the expression below?

$$n + n + n + n + n$$

A. $5n$ B. $\frac{n}{5}$ C. 5 D. $5 + n$

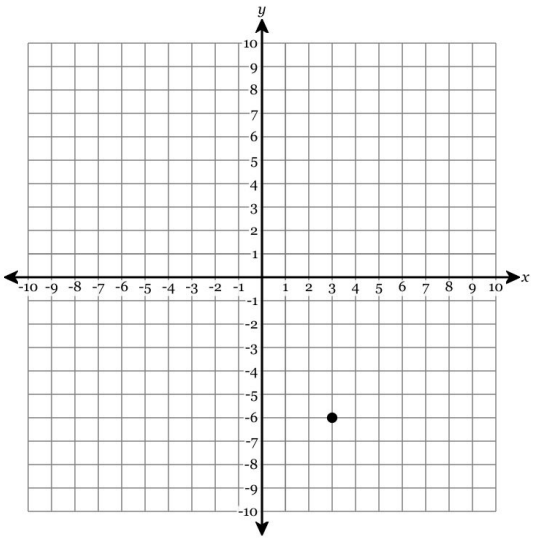
48. Which expression is equivalent to the expression below?

$$t + t + t + t + v + v + v + v + v$$

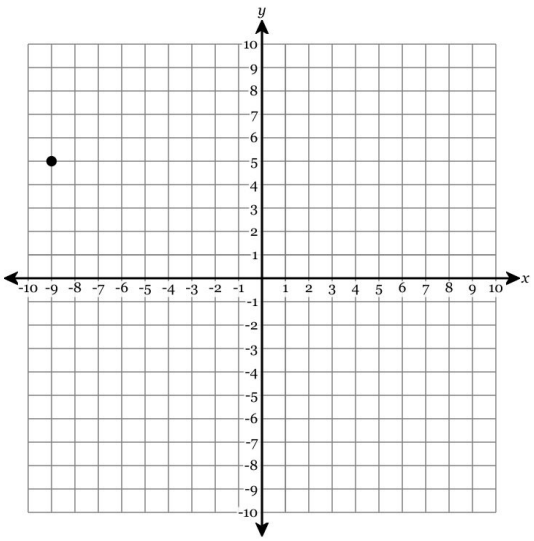
A. $9 + t + v$ B. 9

C. $\frac{t}{4} + \frac{v}{5}$ D. $4t + 5v$

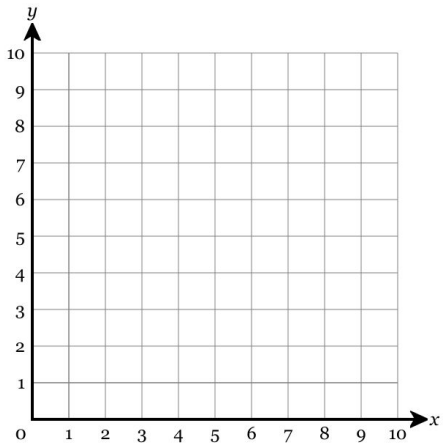
49. State the coordinates of the point.



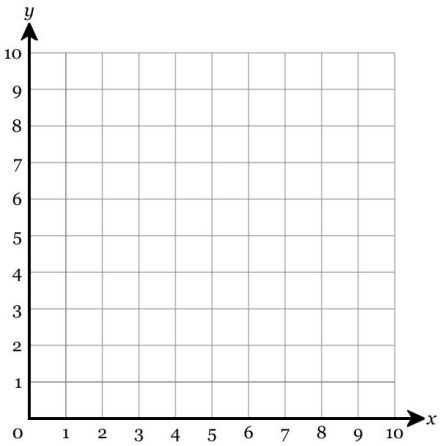
50. State the coordinates of the point.



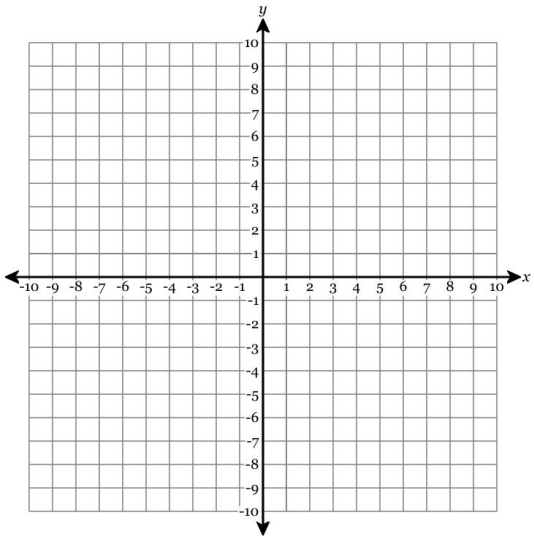
51. Plot the point $(0, 4)$.



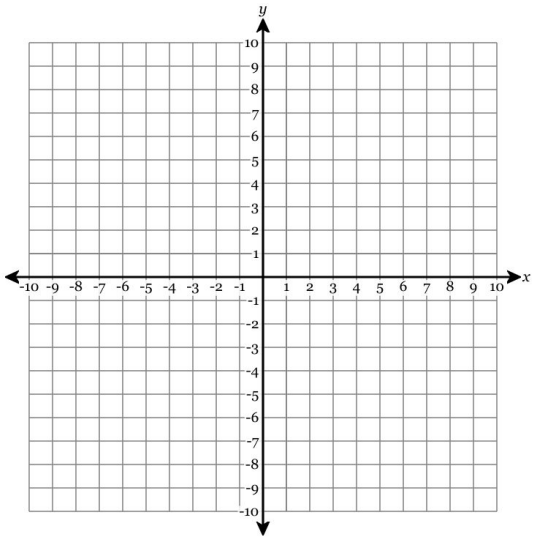
52. Plot the point $(5, 7)$.



53. Plot the point $(1, -2)$.



54. Plot the point $(3, 3)$.



55. In which quadrant does the point $(-5, 6)$ lie?

A. Quadrant I

B. Quadrant II

C. Quadrant III

D. Quadrant IV

56. Select the point which lies in the third quadrant.

A. $(4, 3)$

B. $(1, -2)$

C. $(-1, -3)$

D. $(-8, 7)$

57. Find the value of x in the equation below.

$$\frac{x}{4} = 6$$

58. Find the value of x in the equation below.

$$17 = x + 16$$

59. Solve for b.

$$5 = b + 7$$

60. Solve for r.

$$3 = r + 3$$

61. Solve for s.

$$-11s = 33$$

62. Solve for s.

$$60 = 10s$$

63. Solve for a. You must write your answer in fully simplified form.

$$13 = 4a$$

64. Solve for r. You must write your answer in fully simplified form.

$$-4 = -5r$$

65. Solve for w.

$$2 = \frac{w}{8}$$

66. Solve for t.

$$\frac{t}{5} = -1$$

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

$$-14 = -7x$$

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

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

69. Solve for z.

$$-1 + 8z = -73$$

70. Solve for y.

$$-10 = \frac{y}{11} - 13$$

71. Solve for c.

$$79 = -\frac{7}{10}c + 23$$

72. Solve for b.

$$26 = \frac{1}{2}b + 19$$

73. Solve. $2(5z + 3) = -44$

74. Solve. $3(x + 7) = -6$

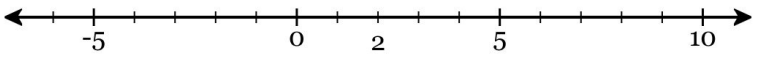
75. Solve for x.

$$5(3x + 2) - 2x - 5 = -8$$

76. Solve for x.

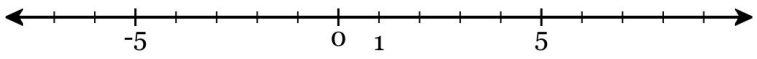
$$5(2x + 5) - 3x - 2 = 2$$

77. Select the values that make the inequality $q < 2$ true. (Numbers written in order from least to greatest going across.)



☐ -6	☐ -3	☐ -1
☐ 1	☐ 1.9	☐ 1.99
☐ 1.999	☐ 2	☐ 2.001
☐ 2.01	☐ 2.1	☐ 3
☐ 5	☐ 7	☐ 10

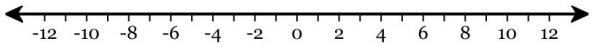
78. Select the values that make the inequality $s \leq 1$ true. (Numbers written in order from least to greatest going across.)



☐ -7	☐ -4	☐ -2
☐ 0	☐ 0.9	☐ 0.99
☐ 0.999	☐ 1	☐ 1.001
☐ 1.01	☐ 1.1	☐ 2
☐ 4	☐ 6	☐ 9

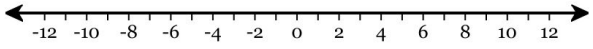
79. Solve for x and graph the solution on the number line below.

$$3 + x < 3$$



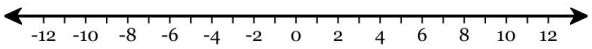
80. Solve for x and graph the solution on the number line below.

$$70 < -7x$$



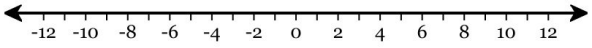
81. Solve the inequality and graph the solution on the line provided.

$$2x - 14 > 0$$



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

$$4 + 6x \geq 34$$



83. Which of these contexts describes a situation that is ***an equal chance or 50-50***?

A. Rolling a 0 on a standard six-sided die, numbered from 1 to 6.

B. Spinning a spinner divided into four equal-sized sections colored red/green/yellow/blue and landing on blue or green.

C. Winning a raffle that sold a total of 100 tickets if you bought 95 tickets.

D. Reaching into a bag full of 17 strawberry chews and 3 cherry chews without looking and pulling out a cherry chew.

84. Avani rolls a standard six-sided die, numbered from 1 to 6. Which word or phrase describes the probability that she will roll a 3?

A. certain B. unlikely

C. impossible D. an equal chance or 50-50

85. A triangle has side lengths of $(2h - 4)$ centimeters, $(5h + 10)$ centimeters, and $(8k + 10)$ centimeters. Which expression represents the perimeter, in centimeters, of the triangle?

A. $18k + 6 + 7h$ B. $13h + 18k$

C. $-2h + 18k + 15$ D. $8k + 7h + 16$

86. A triangle has side lengths of $(9f - 7g)$ centimeters, $(8f + 5h)$ centimeters, and $(8h - 3g)$ centimeters. Which expression represents the perimeter, in centimeters, of the triangle?

A. $13h + 17f - 10g$ B. $-2g + 17f + 5h$

C. $25fh - 5gh$ D. $2fg + 13fh + 5gh$

87. Rewrite in simplest terms: $(-8x + 8) - (7x + 2)$

88. Rewrite in simplest terms:
$(-10x - 7) + (7x + 1)$

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

$$6(x + 3)$$

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

$$6(3n + 2p)$$

91. Write an equivalent expression by distributing the "$-$" sign outside the parentheses:

$$-(-4m - 9.5)$$

92. Write an equivalent expression by distributing the "$-$" sign outside the parentheses:

$$-(4.4v - 3w + 10)$$

93. Identify the greatest common factor of $20axy$ and $22w$.

94. Identify the greatest common factor of $40az$ and $15z$.

95. Find the y-intercept of the line represented by the equation below.

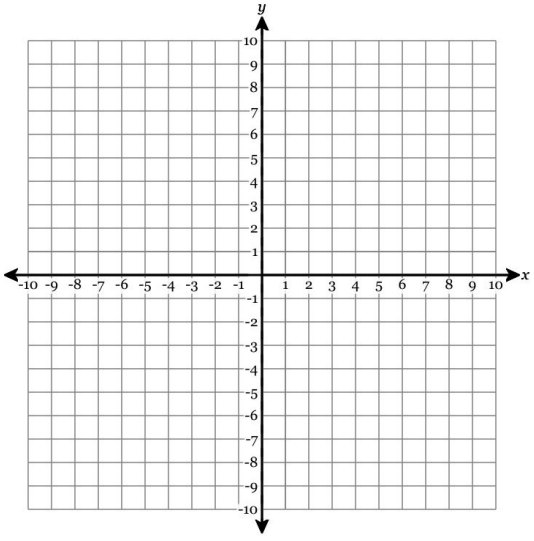
$$-\frac{3}{4}x + 5 = y$$

96. Find the slope of the line represented by the equation below.

$$-2x = y$$

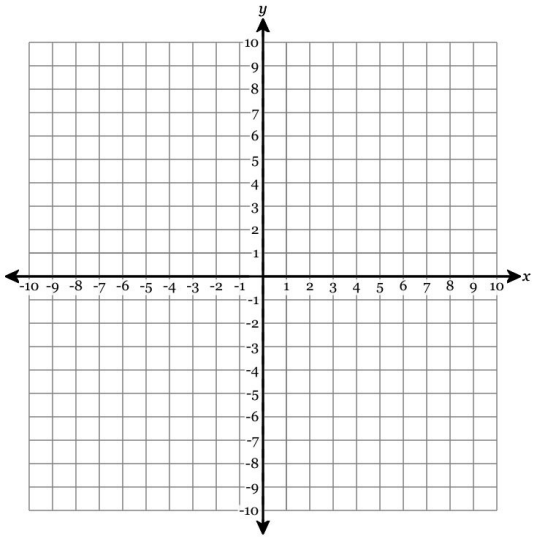
97. Graph the following features:

- Slope = $\frac{2}{3}$
- Y-intercept = 3



98. Graph the following features:

- Slope = 4
- Y-intercept = 2



99. What is the slope of the line that passes through the points $(4, 8)$ and $(9, 8)$? Write your answer in *simplest form*.

100. What is the slope of the line that passes through the points $(7, 3)$ and $(4, 0)$? Write your answer in *simplest form*.