NAME _____

Please write your name on each page.

Dear students,

I would like you to be as prepared as possible for Algebra I next year. By completing this packet, you will not only retain more of what you have already learned, but will have a glimpse into what you will be learning next year. This packet will be an integral part of what we do next year.

This packet will be collected during the first week of school. As the school year progresses, I will return specific pages back to you for correction, discussion, and reflection. Thus, the work you show in this summer packet will be used to earn grades during the school year.

It is important that you:

- Work a little each week during the summer. (See *recommended pacing* below.)
- Do NOT wait until the last two weeks of summer to complete this packet. That is a stressful way to work.
- Ask your parents for help. Research helpful information using the internet, old textbooks, etc.
- Do NOT look up the answers or how to do a specific problem. I want to see your thoughts on paper. Show all work.
- You may not understand everything in this packet, but you should try everything in this packet. *There is growth in the struggle toward success.*

☀️ Recommended Pacing ☀️

- ☐ Week 1: Page 2
- ☐ Week 2: Page 3
- ☐ Week 3: Page 4
- ☐ Week 4: Pages 5 and 6
- ☐ Week 5: Pages 7 and 8
- ☐ Week 6: Pages 9 and 10
- ☐ Week 7: Pages 11, 12, and 13
- ☐ Week 8: Pages 14 and 15

NAME _____

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Add or subtract.

1. $-9 + (-15)$ **2.** $2 + (-3)$ **3.** $6 - 9$

4. $-6 - 11$ **5.** $13 + 8$ **6.** $-12 - (-10)$

Multiply or divide.

7. $2(-7)$ **8.** $-8 \bullet 2$ **9.** $9 \div 3$

10. $25 \div (-5)$ **11.** $-30 \div (-6)$ **12.** $-1(-7)$

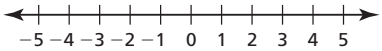
Solve the problem and specify the units of measure.

13. The length of a rectangle is 6 feet and the width is 3 feet. Find the perimeter of the rectangle.

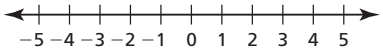
14. One side of a square measures 9 centimeters. Find the area of the square.

Graph the number.

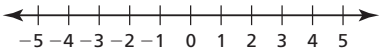
15. 4



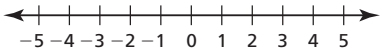
16. $|-3|$



17. $-6 + |5|$



18. $1 - |-3|$



Complete the statement with <, >, or =.

19. $3 \_\_\_\_ 7$ **20.** $-1 \_\_\_\_ 4$

21. $-4 \_\_\_\_ -10$ **22.** $|-6| \_\_\_\_ -3$

Evaluate the expression for the given value of *x*.

23. $2x - 6;\ x = 9$ **24.** $-7 + 9x;\ x = 3$ **25.** $12x + 13;\ x = 5$

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. See left.
16. See left.
17. See left.
18. See left.
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____

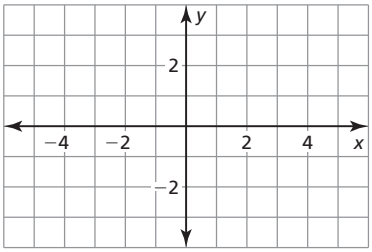
NAME _____

Please write your name on each page.

Evaluate the expression for the given value of *x*.

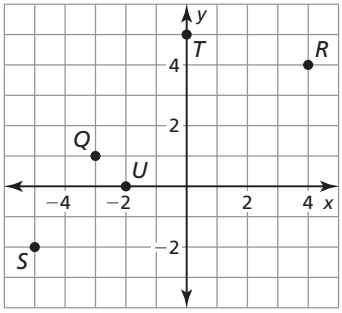
26. $-x - 12;\ x = 4$ **27.** $13 - 7x;\ x = -10$ **28.** $11x + 17;\ x = -6$

Plot the point in the coordinate plane. Describe the location of the point.



29. $A(4, 2)$ **30.** $B(-1, 3)$ **31.** $C(-5, -3)$ **32.** $D(3, 0)$

Use the graph to answer the question.



33. Which ordered pair corresponds to point *U*?

34. Which ordered pair corresponds to point *S*?

35. Which point is located in Quadrant II?

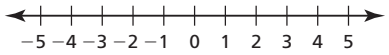
Solve the equation for *y*.

36. $2x - y = 3$ **37.** $3x + 2y = -4$ **38.** $-2x = 6y + 3$

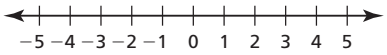
39. $0 = 7x - y + 12$ **40.** $-2y + x = 4y - 6$

Solve the inequality. Graph the solution.

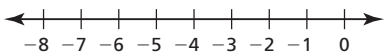
41. $p + 6 > 9$



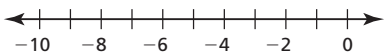
42. $3x - 4 < 2$



43. $-4m + 6 \leq 22$



44. $5x + 1 \leq 3x - 9$



Answers

26. _____

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

33. _____

34. _____

35. _____

36. _____

37. _____

38. _____

39. _____

40. _____

41. _____

See left.

42. _____

See left.

43. _____

See left.

44. _____

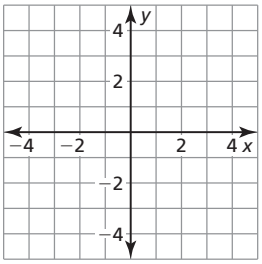
See left.

NAME _____

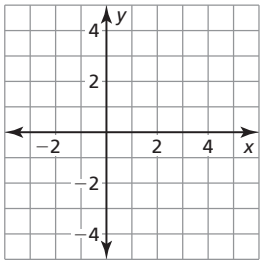
Please write your name on each page.

Graph the equation.

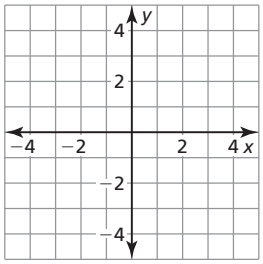
45. $y - 2 = 2x$



46. $2y + x = 8$



47. $2x - 3y = 6$



Evaluate the expression.

48. $14 \div 7 - 2^2 + (-3) \bullet 2 - 1$

49. $-4 - (3 + 6^2) \div 13 - 1^2 \bullet (-12)$

Find the square root(s).

50. $\sqrt{25}$

51. $-\sqrt{81}$

52. $\pm\sqrt{9}$

53. $-\sqrt{144}$

Simplify the expression.

57. $7x - 1 + 2x$

58. $3m + 2 - 6m + 8 - 1$

59. $-4(2y - 1) + 3y - 7$

60. $3(d + 3) - (2d - 1) + 11d + 8$

Evaluate the expression when $x = -3$.

61. $3x^2 - 6$

62. $2x^2 - 6x + 1$

63. $-x^2 - 5x - 1$

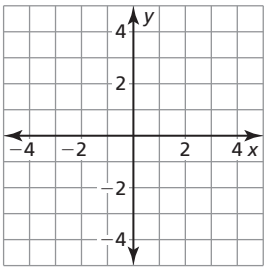
64. $x^2 + 3x + 8$

65. $-2x^2 + 4x + 3$

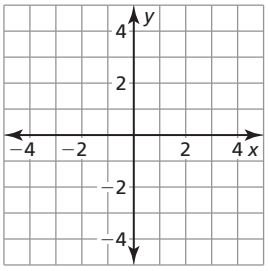
66. $-3x^2 - 6 - x$

Solve the system of linear equations by graphing.

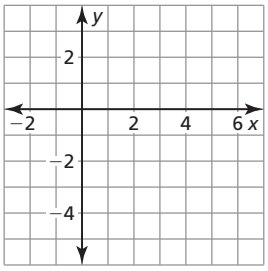
67. $y = 2x + 1$
$y = -2x - 3$



68. $y = -\frac{1}{2}x + 1$
$y = x + 1$



69. $y = \frac{2}{3}x - 4$
$y = -\frac{4}{3}x + 2$



Answers

45. See left.

46. See left.

47. See left.

48. _____

49. _____

50. _____

51. _____

52. _____

53. _____

54. _____

55. _____

56. _____

57. _____

58. _____

59. _____

60. _____

61. _____

62. _____

63. _____

64. _____

65. _____

66. _____

67. _____

68. _____

69. _____

NAME _____

Please write your name on each page.

Find each sum.

1) $(-7)+9$

2) $(-8)+(-1)$

3) $(-1)+5$

4) $(-6)+12$

5) $(-8)+(-5)$

6) $11+(-2)$

7) $49+(-15)$

8) $(-47)+30$

9) $49+(-27)$

10) $(-29)+9$

11) $43+(-1)$

12) $10+(-2)+1$

13) $(-2)+11+4$

14) $12+7+(-4)$

15) $(-7)+3+9$

16) $(-1)+11+5$

NAME _____

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17) $2 + 10 + (-10) + 10$

18) $10 + (-11) + 5 + (-5)$

19) $2 + 6 + (-7) + 10$

20) $(-5) + (-8) + (-2) + 1$

21) $(-6.8) + (-1.9)$

22) $2.489 + (-4.3)$

23) $(-4.7) + 5.7$

24) $(-5) + (-7.1)$

25) $(-3.9) + 7.1 + (-7.8)$

26) $(-4.5) + 4.9 + 3.4$

27) $(-2.1) + (-1) + (-7.6)$

28) $0.85 + (-2.4) + 4.5$

29) $\frac{5}{3} + \left(-\frac{7}{5}\right)$

30) $\frac{8}{5} + \left(-\frac{1}{3}\right)$

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

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

33) $2 + \left(-\frac{1}{4}\right)$

34) $\left(-\frac{1}{4}\right) + \left(-\frac{3}{2}\right)$

NAME _____

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1) Which expression simplifies to 5? a) $4 + 9 \div 3 - 2$ b) $60 - 5(11) + 7$	2) Simplify the expression. $4(8) - 6 \div 2$	3) Simplify the expression. $6(21 - 3)$
4) Which expression simplifies to 56? a) $7 + 3(6) - 4$ b) $70 - 5 \div 3 + 8$ c) $42 \div [6(8)]$ d) $60 - (12 \div 4 + 1)$	5) Simplify the expression. $87(7 - 6 \div 2)$	6) Simplify the expression. $\frac{10.8 + 3.2}{15 - 13}$
7) Which expression simplifies to 6? a) $6 + 12(2) - 18$ b) $28 \div [7(2)] - 2$ c) $25 - 10 \div 5 + 3$ d) $18 - (15 \div 3 + 7)$	8) Simplify the expression. $2(36) - 24 \div 6$	9) Simplify the expression. $3[2.5 + 3(12 - 7)]$
10) Simplify $\frac{(7 \cdot 6^2 - 7 \cdot 3^2)}{(4 + 3)}$	11) Simplify the expression. $(5 \div 5) + 5(5^2 - 5)$	12) Simplify the expression. Express your final answer in simplest form. $\frac{126 - 108}{24 \div 3(2)}$
13) Simplify the expression $222 - 3(5^2 - 4^2) + 12$	14) Simplify the expression. $2(6)^2 - 26 \div 2$	15) Simplify the expression. Express your final answer in simplest form. $\frac{24 \div 3(2)}{126 - 108}$

NAME _____

Please write your name on each page.

1) What is the value of y? $-5y + 23 = 68$	2) What is the value of t? $25 + 6t - 7 = 36$
3) What is the value of n? $9n - 15 = 39$	4) What is the value of y? $-6y + 13 = 61$
5) What is the value of y? $-8(y+5) - 29 = 43$	6) What is the value of y? $11y + 34 = 7y - 32$
7) What is the value of t? $14t + 25 - 5t = 34$	8) What is the value of y? $y + 6.17 = -31.58$
9) Valentina has $41 to spend on the school field trip. After paying for the $28.45 for the cost of the field trip and $8.72 for lunch, how much will she have left?	10) Ralph is an electrician. He charges an initial fee of $24, plus $33 per hour. If Ralph earned $189 on a job, how long did the job take?
11) Manuel just bought a new television for $629.00. He made a down payment of $57.00 and will pay monthly payments of $26.00 until it is paid off. How many months will Mnauel be paying? (Assume that Manuel pays no interest.)	12) The 19 members of a football team are trying to raise at least $1266.00 to cover the traveling cost for a holiday tournament. If they have already raised $451.00, at least how much should each member still raise, on average, to meet the goal?
13) Members at a yoga school pay $10 per class plus a one-time $100 membership fee. Non-members pay $15 per class. How many classes would a member have to take to save money compared to taking classes as a non-member?	14) Members at a yoga school pay $8 per class plus a one-time $90 membership fee. Non-members pay $12 per class. How many classes would a member have to take to save money compared to taking classes as a non-member?

NAME _____

Please write your name on each page.

1) Order the following numbers from least to greatest. $\frac{5}{8}$, 28% , 0.62	2) Order the following numbers from least to greatest. 21% , $\frac{1}{3}$, 0.44
3) Order the following numbers from least to greatest. $\frac{1}{3}$, 7% , 0.68	4) Order the following numbers from least to greatest. 0.42 , 16% , $\frac{5}{6}$
5) Earth is made up of several different elements. Suppose a certain element makes up 8% of Earth. Express 8% as a decimal.	6) A soil sample contains clay, composted materials, and sand. Clay makes up 29% of the soil sample. Express 29% as a decimal.
7) Express the decimal 0.49 as a percent.	8) Express 316% as a decimal.
9) Alicia wants to buy a necklace. The necklace has a list price of $41, and the sales tax is 6%. What will be the cost of the necklace after tax is added? Round your answer to the nearest cent.	10) Melanie sells dolls at her doll store. If she sells a doll for $35, and there is 6% sales tax, what is the total cost of the doll? Round your answer to the nearest cent.

NAME _____

Please write your name on each page.

To multiply fractions, multiply the numerators, then multiply the denominators. $\frac{1}{3} \cdot \frac{5}{8} = \frac{5}{24}$

To divide fractions,
first, change the multiplication symbol to a division
second, change the second fraction to its reciprocal
then, follow the multiplication rules.

$\frac{2}{7} \div \frac{8}{9} = \frac{2}{7} \cdot \frac{9}{8} = \frac{18}{56} = \frac{9}{28}$ Reduce

1) Multiply. Express your answer in simplest form. $\frac{-1}{4} \cdot \frac{2}{3}$	2) Multiply. Express your answer in simplest form. $\frac{-2}{3} \cdot \frac{-1}{2}$
3) Multiply. Express your answer in simplest form. $\frac{5}{8} \cdot \frac{-7}{12}$	4) Multiply. Express your answer in simplest form. $\frac{4}{7} \cdot \frac{5}{12}$
5) Multiply. Express your answer in simplest form. $4 \cdot 1\frac{2}{3}$	6) Multiply. Express your answer in simplest form. $7\left(-\frac{6}{7}\right)$
7) Divide. Express your answer in simplest form. $\frac{-3}{4} \div \frac{-1}{8}$	8) Divide. Express your answer in simplest form. $\frac{1}{6} \div \frac{-1}{3}$
9) Divide. Express your answer in simplest form. $3\frac{2}{3} \div \frac{4}{9}$	10) A recipe calls for $2\frac{1}{4}$ cups of flour to make a batch of cookies. How many batches of cookies can be made if you have $15\frac{3}{4}$ cups of flour?

NAME _____

Please write your name on each page.

Vocabulary	Definition	Diagram, Picture, or Example
Absolute Value		
Base of a Power		
Exponent		
Power		
Perfect Square		
Square Root		
Radical Expression		
Pythagorean Theorem		

NAME _____

Please write your name on each page.

Vocabulary	Definition	Diagram, Picture, or Example
Monomial		
Binomial		
Trinomial		
Polynomial		
Variable		
Constant Term		
Coefficient		
Variable		
Like terms		
Terms of a polynomial		

NAME _____

Please write your name on each page.

Vocabulary	Definition	Diagram, Picture, or Example
Product		
Sum		
Quotient		
Difference		
Order of Operations		
Terminating Decimal		
Repeating Decimal		
Opposites		
Reciprocals		

NAME _____

Please write your name on each page.

Vocabulary	Definition	Diagram, Picture, or Example
Rational Numbers		
Irrational Numbers		
Prime Numbers		
Composite Numbers		
Prime Factorization		
Factor Tree		
Simplest Form of a Fraction		
Equivalent Fractions		
Ratio		

NAME _____

Please write your name on each page.

Vocabulary	Definition	Diagram, Picture, or Example
Multiplicative Inverse		
Negative integers		
Positive Integers		
Numerical Expression		
Opposites		
Order of Operations		
Percent		
Percent of change		
Percent of increase		
Percent of Decrease		