Name: _____

Summer Packet Honors Algebra I

MUST SHOW WORK!

*There will be a quiz on this in August 2019

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Summer Math Review Packet For : Students **entering Algebra 1**

The problems in this packet are designed to help you review topics from Pre-Algebra and other courses that are important to your success in Algebra 1. Please try to do each problem and show the work that supports that answer. You are encouraged to complete or attempt to complete all of these questions before beginning Algebra I the last week of August.

Enjoy your summer! We look forward to seeing you in August!

Use order of operations to determine each answer:

1) $4 \cdot 16 + 8 - 0 \div 5$

2) $8(3 + 4) - 2 * 8 \div (5 - 3)$

3) $(8^2 + (13 - 4)^2) \div 5$

Insert parentheses to make the following equation true:

4) $8 + 12 \div 4 \cdot 5 = 1$

Determine the answer for each problem:

5) $94 - 87 =$ _____

6) $-51 - 98 =$ _____

7) $29 - 100 =$ _____

8) $-777 - (-801) =$ _____

9) $-10 \cdot (-2 \cdot 18) =$ _____

10) $-(4 + -x) =$ _____

11) $-844 \div 4 =$ _____

12) $\frac{-183}{-61} =$ _____

13) $891 \div -9 =$ _____

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Simplify each expression completely.

14) $-2(x+3) =$ _____

15) $3(2x-3)+(x-5) =$ _____

16) $\frac{2}{3}(3x+9) =$ _____

17) $5\frac{2}{5} + 4\frac{1}{5} =$ _____

18) $\frac{2}{3} + \frac{5}{8} + \frac{5}{6} =$ _____

19) $9 - 2\frac{1}{3} =$ _____

20) $10\frac{1}{4} - 3\frac{2}{3} =$ _____

21) $\frac{1}{2} * \frac{5}{8} * \frac{4}{5} =$ _____

22) $-\frac{16}{9} \div 8 =$ _____

23) $-\frac{3}{8} \div \frac{3}{4} =$ _____

Write as a decimal:

24) $\frac{7}{10} =$ _____

25) $\frac{1}{3} =$ _____

26) $8\frac{1}{4} =$ _____

Write as a percent:

27) $\frac{4}{5} =$ _____

28) $1\frac{2}{5} =$ _____

29) $\frac{2}{3} =$ _____

Write as a decimal:

30) $51\% =$ _____

31) $102\% =$ _____

32) $\frac{3}{4}\% =$ _____

Write as a simple fraction in lowest terms:

33) $125\% =$ _____

34) $3\% =$ _____

35) $50\% =$ _____

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Write as a percent AND as a simple fraction or mixed number:

36) .25 = _____
= _____

37) 1.2 = _____
= _____

38) .125 = _____
= _____

Solve each equation below and check your answers:

39) $x + 22 = 104.8$

40) $184 - x = 51$

41) $x - 6 = 30 + 12$

42) $30x = 480$

43) $4y - 8 = 20$

44) $17 = \frac{x}{3}$

45) $\frac{x}{24} = \frac{5}{12}$

For each of the following, write an algebraic equation. Then solve each equation.

46) Eight times a number, increased by 6, is 62. What is the number?

47) Number C divided by 0.4 is 10. What is C?

48) One half of a number is equal to 14. What is the number?

49) What number is 15% of 60?

50) 66 is 11% of what number?

51) 308 is what percent of 350?

52) A coat usually selling for $150 is on sale at 25% off. What is the sale price of the coat?

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53) Jim purchased three CD's for $15.00 each. What will the total cost for the CD's be inlcluding a 7% sales tax?

Evaluate each expression given that:

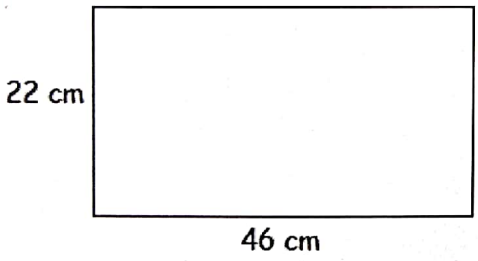
a) $x = 4$ and b) $x = -3$

	$x = 4$	$x = -3$
54) $2x =$	_____	_____
55) $x^2 =$	_____	_____
56) $x + 6 =$	_____	_____
57) $5x - 3 =$	_____	_____

Basic Geometry and Using Formulas.

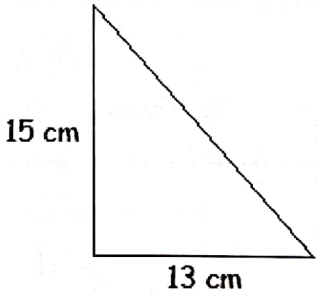
58) Find the perimeter.

$P = 2l + 2w$



59) Find the perimeter to the nearest whole number.

$P = s + s + s$ $a^2 + b^2 = c^2$



60) Find the area. $A = \frac{1}{2}bh$

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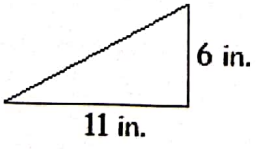

61) Find the area. $A = bh$

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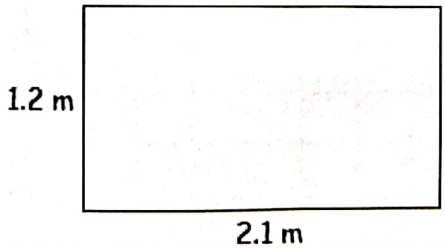

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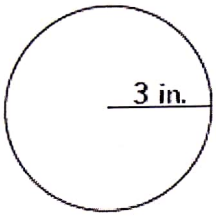
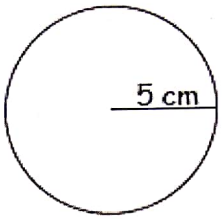
62) Find the circumference to the nearest tenth.
$C = \pi d$ Pi = 3.14



63) Find the area to the nearest tenth.
$A = \pi r^2$ Pi = 3.14



Simplify:

64) $4(x + 3) =$ _____

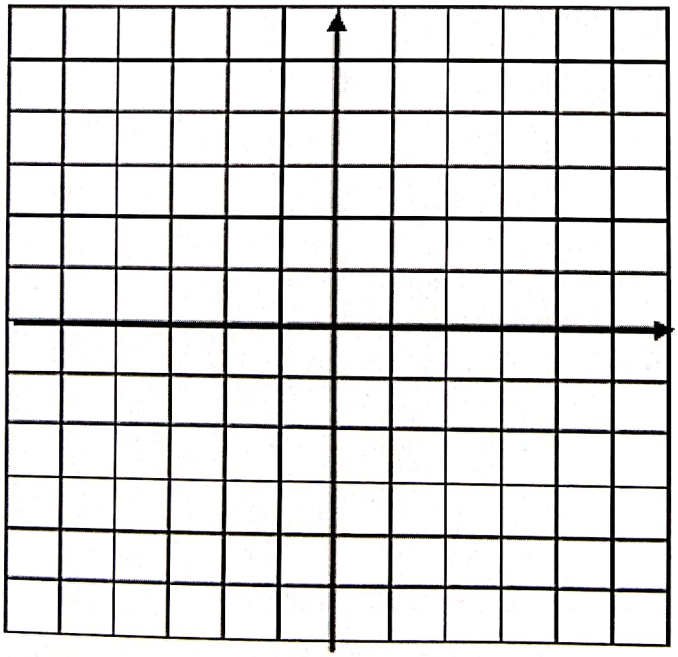
65) $-2(3x - 5) =$ _____

66) $2(3b + 1) - 5$

67) $2(x + 3) - 5(2x + 1)$

Plot each of the following points on the grid below. Use the letter to label the point on the graph.

68) A(3,0) B(5,5) C(-1,2) D(-3,-2) E(0,-3)



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ADDING AND SUBTRACTING INTEGERS

Instructions: Find the Sum or Difference **without using a calculator.** Calculators will not be allowed on the quiz in the fall. If you do work on a separate sheet of paper, please staple that sheet to this worksheet.

1. 9 + -4

2. -1 + -6

3. 2 + -6

4. -14 + -7

5. 5 + -10

6. 13 + -12

7. 12 + -4

8. -4 + 6 + 5

9. -45 + -67

10. -13 + -4

11. 14 + -62

12. 15 + -8

13. 7 + -7

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14. 9 – (-1)

15. 5 – 8

16. 6 – 9

17. -16 – (-2)

18. 27 – 52

19. 19 – (-12)

20. -10 – (-8)

21. 11 – (-25)

22. -28 – 28

23. -28 – (-28)

24. -36 – 29

25. 10 – (-14)

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Linear Functions

Exercises

Tell whether each ordered pair is a solution of the equation.

1. $3x + y = -11, (-4, 1)$

2. $2x - y = 4, \ (3, -2)$

Find the intercepts of the equations graph.

3. $3x - 4y = -12$

4. $y = -2x - 8$

Find the slope through the given points.

5. $(4, 7), (-3, 6)$

6. $(-5, 7), (-5, -14)$

Identify the slope and y-intercept of the line with the given equation.

7. $y = 2x - 12$

8. $2x - 3y = -6$

Write an equation of the line that is parallel to the given line and passes through the given point.

9. $y = -2x - 6, \ \ (0, -4)$

10. $-2x + 3y = 12, \ \ (3, 2)$

Graph the equation using any method.

11. $y = 2x - 3$

12. $-2x - 3y = 12$

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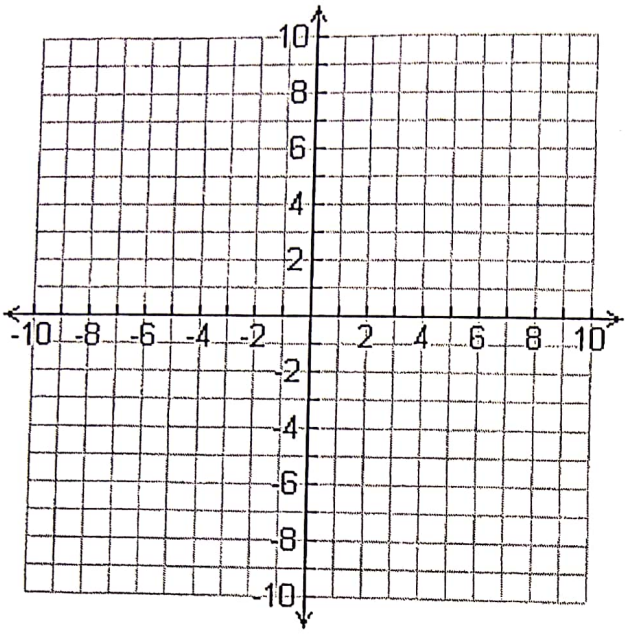

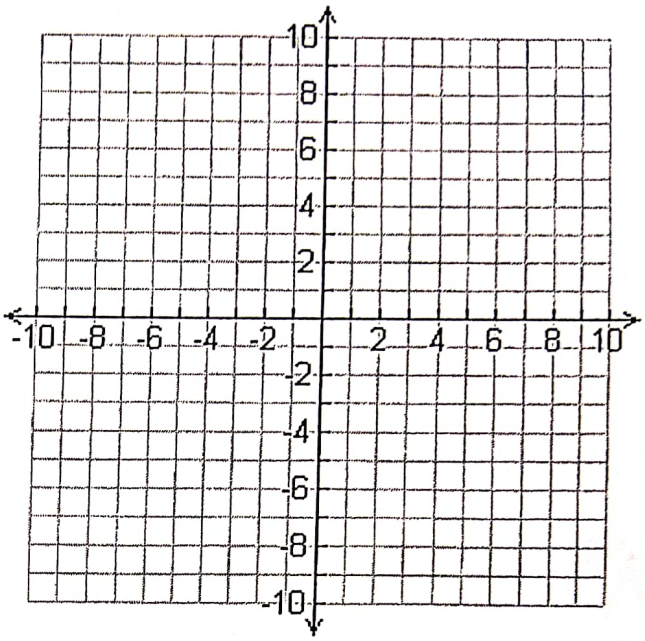

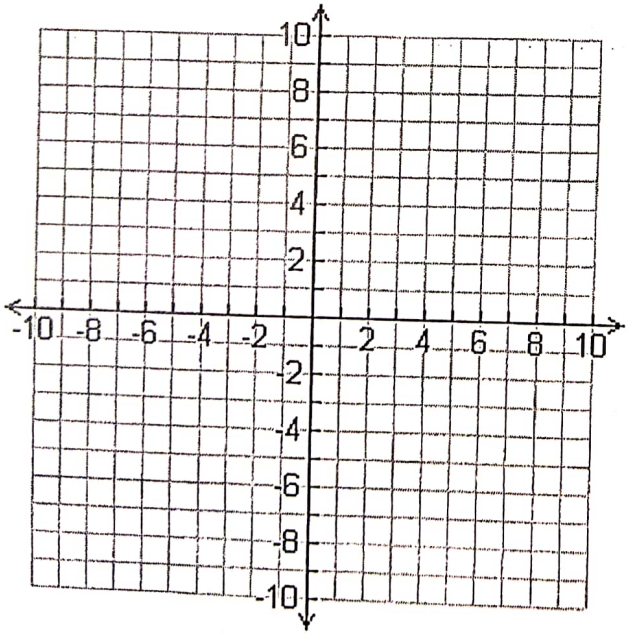

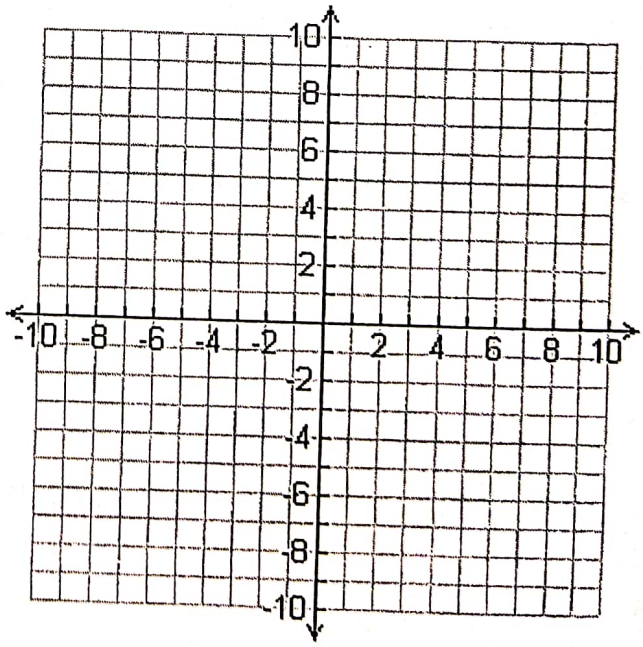

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Exponent Rules Review Worksheet

NOTE: Anything to the zero power equals 1!

Product Rule: When multiplying monomials that have the same base, add the exponents.

$$x^m \cdot x^n = x^{m+n}$$

Example 1: $x \cdot x^3 \cdot x^4 = x^{1+3+4} = x^8$ Example 2: $(2x^2y)(-3x^3y^4) = 2 \cdot (-3) \cdot x^2 \cdot x^3 \cdot y \cdot y^4 = -6x^5y^5$

Power Rule: When raising monomials to powers, multiply the exponents.

$$(x^m)^n = x^{m \cdot n}$$

Example 3: $(x^2y^3)^4 = x^{2 \cdot 4} y^{3 \cdot 4} = x^8y^{12}$ Example 4: $(2x^3yz^2)^3 = 2^3 x^{3 \cdot 3} y^3 z^{2 \cdot 3} = 8x^9y^3z^6$

Quotient Rule: When dividing monomials that have the same base, subtract the exponents.

$$\frac{x^m}{x^n} = x^{m-n}$$

Example 5: $\frac{x^3}{x^{-2}} = x^{3-(-2)} = x^5$ Example 6: $\frac{5^6}{5^2} = 5^{6-2} = 5^4$ Example 7: $\frac{36m^3n^5}{-9mn^4} = \frac{36}{-9} \cdot \frac{m^3}{m} \cdot \frac{n^5}{n^4} = -4m^2n$

Simplify each of the following. Copy the problem. Work on your own paper.

1) $a \cdot a^2 \cdot a^3$ 2) $(2a^2b)(4ab^2)$ 3) $(6x^2)(-3x^5)$ 4) $b^3 \cdot b^4 \cdot b^7 \cdot b$ 5) $(3x^3)(3x^4)(-3x^2)$

6) $(2x^2y^3)^2$ 7) $(5x^2y^4)^3$ 8) $(6x^4y^6)^3$ 9) $(4x^3y^3)^3$ 10) $(7xy)^2$

11) $\frac{x^3}{x}$ 12) $\frac{18c^3}{-3c^2}$ 13) $\frac{9a^3b^5}{-3ab^2}$ 14) $\frac{-48c^2d^4}{-8cd}$ 15) $\frac{22y^6z^8}{2yz^{-7}}$

16) $x^2 \cdot x^7$ 17) $(x^2)^7$ 18) $(-2x^4)^5$ 19) $2x^3 + 7x^3$ 20) 7^0

21) $8x^0$ 22) -3^4 23) $(-3)^4$ 24) $6x^0y^8 - (2y^2)^4$ 25) $(x+2y)(x-2y)$

26) $\frac{2x^3}{-8x^4}$ 27) $\frac{xy^7}{x^3y^4}$ 28) $6x^5 \cdot 3x^5 \cdot x^0$ 29) $(3st^{12})^3$ 30) $\left(\frac{3m^2n^7}{m}\right)^5$

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