Algebra 1 Summer Packet Name _____

Pencil only **Due: First day of class**

NO calculator allowed for problems #1 – 67.

Evaluate the following **without a calculator**.

1) $5-3\bullet 7+4\div 2$
A) -18 B) -14 C) 6 D) 9

2) $\left|-4\right|+5$
A) -1 B) 1 C) 9 D) 20

3) $-5+1-13$
A) -17 B) -7 C) 7 D) 9

4) $(2)(-4)(-5)(-1)$
A) -41 B) -40 C) -8 D) 40

5) $2-9=$
A) -11 B) -7 C) 7 D) 11

6) $-2-9=$
A) -11 B) -7 C) 7 D) 11

7) $-2+9=$
A) -11 B) -7 C) 7 D) 11

8) $2-(-9)=$
A) -11 B) -7 C) 7 D) 11

9) $5^2=$
A) 7 B) 10 C) 25 D) 52

10) $(-3)^2$
A) -9 B) -6 C) 6 D) 9

11) -3^2
A) -9 B) -6 C) 6 D) 9

12) $\frac{2}{8}+\frac{5}{8}$
A) $\frac{7}{16}$ B) $\frac{7}{8}$ C) $\frac{10}{16}$ D) $\frac{7}{64}$

13) $-\frac{3}{4} \bullet \frac{2}{7}$

A) $\frac{3}{14}$ B) $-\frac{3}{14}$ C) $\frac{21}{8}$ D) $-\frac{21}{8}$

14) $-\frac{1}{3} \div \frac{3}{5}$

A) $-\frac{1}{5}$ B) $-\frac{5}{6}$ C) $-\frac{5}{9}$ D) -5

15) $\frac{3}{4} + \frac{4}{5}$

A) $\frac{7}{9}$ B) $\frac{2}{5}$ C) $\frac{31}{20}$ D) $\frac{4}{3}$

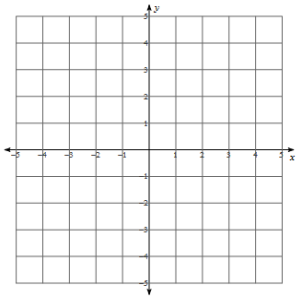
16) What is the least common denominator (LCD) of $\frac{2}{3}$ and $\frac{1}{2}$?

A) 2 B) 3 C) 6 D) 8

17) What is the greatest common factor (GCF) of 18 and 45?

A) 2 B) 5 C) 9 D) 18

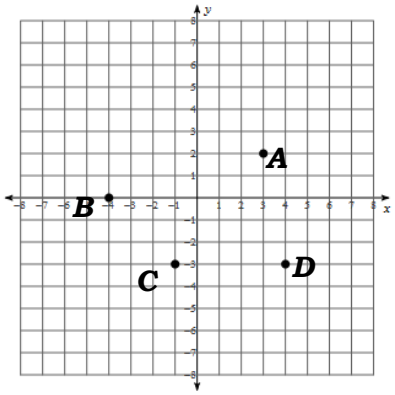
18) Plot and label the ordered pairs with the letter.



$A(2,1)$ $B(-3,4)$ $C(0,-3)$

$D(-4,-1)$ $E(4,0)$ $F(1,-2)$

19) Which ordered pair below lies in Quadrant III ? 19) _____



20) Write the expression $5 \bullet x \bullet x \bullet x \bullet y \bullet y$ using exponents. 20) _____

Evaluate the following expressions for the given value of the variable(s).

21) $\frac{1}{4}(x-2)+5;\ x=10$ 21) _____

22) $\frac{3}{2}x-10;\ x=6$ 22) _____

23) $\frac{0.5x+9}{x};\ x=6$ 23) _____

24) $b^2-4ac;\ a=1, b=-2, c=-3$ 24) _____

25) $\frac{12}{x+2}-\frac{2}{x-2};\ x=4$ 25) _____

26) $\frac{-b}{2a};\ a=1, b=10$ 26) _____

27) $(x-3)^2+2$ for $x=0$ 27) _____

28) The height, in inches, of a frog jumping off a log can be modeled by the expression $-2t^2+12t+9$, where t is time in seconds. The frog reaches its maximum height at 3 seconds. What is the frog's maximum height? 28) _____

Simplify the following expressions by combining like terms.

29) $2x+7x-3x$ 29) _____

30) $3x-2+x$ 30) _____

31) $\frac{1}{3}y+\frac{2}{3}y+4y$ 31) _____

32) $3x+9+2x-5$ 32) _____

33) $8x-5y+7x-3y$ 33) _____

Use the Distributive Property to simplify each expression.

34) $3(x+4)$ 34) _____

35) $-2(3a+b-5c)$ 35) _____

36) $-(x-7)$ 36) _____

37) $\frac{1}{2}(4x+10)$ 37) _____

Use the Distributive Property to simplify each expression.

38) $6(x+4)+1$ 38) _____

39) $5+4(x-2)$ 39) _____

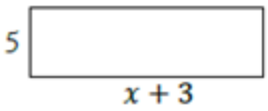
40) $5(x+2)+2(x-1)$ 40) _____

41) $1-5x+2(2.5x+8)$ 41) _____

42) $2(x-3)-5(x+1)$ 42) _____

43) $\frac{1}{3}(9-6x)+\frac{1}{4}(12x-8)$ 43) _____

44) Write a simplified expression for the perimeter and area of the figure below.



Perimeter _____ Area _____

45) Translate each phrase into an algebraic expression.

The sum of six and a number.	5 less than a number *x*.
Twice the sum of a number *x* and 4.	Six less than four times a number y.
A number *x* decreased by nine.	The quotient of a number *x* and 2

Solve each equation **without a calculator**. **Show all work.**

46) $x-5=7$ 46) x = _____

47) $-3=x-8$ 47) x = _____

48) $x+4=-3$ 48) x = _____

49) $-10.1=5.3+x$ 49) x = _____

50) $x-\frac{2}{3}=\frac{1}{6}$ 50) x = _____

51) $3x=15$ 51) x = _____

52) $-5x=-20$ 52) x = _____

53) $\frac{x}{2}=7$ 53) x = _____

54) $10=-2x$ 54) x = _____

55) $6=\frac{x}{-3}$ 55) x = _____

56) $0.2x=1.6$ 56) x = _____

57) $\frac{1}{3}x = 4$ 57) $x =$ _____

58) $\frac{3}{4}x = 6$ 58) $x =$ _____

59) $8 = \frac{2}{5}x$ 59) $x =$ _____

60) $2x + 7 = 3$ 60) $x =$ _____

61) $4x + 3 = -9$ 61) $x =$ _____

62) $-4 + 2x = -10$ 62) $x =$ _____

63) $7 - 6x = 19$ 63) $x =$ _____

64) $-8 = -5x + 2$ 64) $x =$ _____

Write the word sentence as an equation. Then solve for the number.

65) 10 more than a number x is 4 65) $x =$ _____

Equation:

66) The difference between a number x and 6 is -14. 66) $x =$ _____

Equation:

Solve the proportion. **Show all work.**

67) $\frac{x}{4} = \frac{5}{2}$ 67) $x =$ _____

Calculator allowed.

68) Express $\frac{6}{10}$ as a fraction in simplest form, as a decimal, and as a percent.

Fraction: _____ Decimal: _____ Percent: _____

69) Express $\frac{5}{8}$ as a decimal, and as a percent.

Decimal: _____ Percent: _____

Find each number. **Show all work.**

71) What number is 24% of 80? 70) _____

71) 15 is what percent of 40? 71) _____

72) 48 is 75% of what number? 72) _____

Find the new amount. **Show all work.**

73) 8 feet increased by 25%. 73) _____ feet

74) 50 points decreased by 26%. 74) _____ points

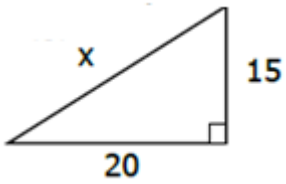
75) The table shows population data for a town. 75) _____
What is the **percent of increase** from 2007 to 2013? **Show all work**.

Year	Population
2007	118,000
2013	138,000

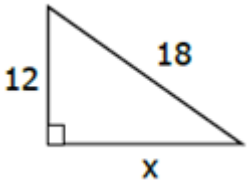
Calculator allowed.

Use the Pythagorean Theorem to find the missing length in each right triangle. Round to the nearest hundredth if necessary. **Show all work.**

76) x = _____

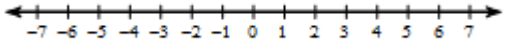


77) x = _____

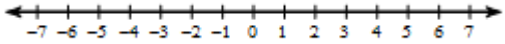


Graph each inequality on the number line.

78) $x > 2$

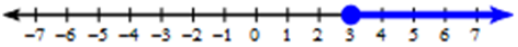


79) $x \leq -1$

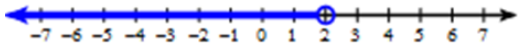


Write an inequality for each graph.

80) _____



81) _____



Solve each inequality. **Show all work.**

82) $2x > 10$

82) _____

83) $x + 4 \leq -2$

83) _____

84) $-3x < 21$

84) _____