Pre-Algebra Summer Assignment   Name: _____
(Freshmen)
Summer 2018

All incoming freshmen who will be taking Algebra in 2017/2018 are required to complete this assignment. Answer all questions. In the spaces provided, clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. You may use a calculator. All students will be tested on this material in September.

Find each sum, difference, product or quotient.

1. $-15 + 6$	**2.** $(-18) - (-3)$	**3.** $(-9)^2$
4. $20 + (-7)$	**5.** $11(-8)$	**6.** $-\dfrac{22}{11}$
7. $(-15)(-2)$	**8.** $\dfrac{1}{7} + \dfrac{5}{7}$	**9.** $48 - 55$
10. $\left(-\dfrac{1}{2}\right) - \left(-\dfrac{3}{4}\right)$	**11.** $\sqrt{49}$	**12.** $\dfrac{10.5}{-1.2}$

Find each sum, product or quotient and write your answer as a fraction in simplest form.

13. $\dfrac{2}{21} + \dfrac{1}{3}$	**14.** $\dfrac{1}{9} \times \dfrac{3}{4}$	**15.** $-\dfrac{2}{21} \div \left(-\dfrac{2}{15}\right)$

Determine whether the number is *rational* or *irrational* and round it to the *nearest hundredth.*

16. $-\frac{3}{7}$	**17.** $\sqrt{3}$

a.   Express each percent as a fraction in simplest form.

b.   Express each percent as a decimal.

18. 20%	**19.** 75%	**20.** 140%
a.	a.	a.
b.	b.	b.

Find the number that satisfies the question.

21. 50% of what number is 31?	**22.** What number is 110% of 51?

Order the following numbers from least to greatest.

| **23.** $4\frac{4}{5}, 4.85, 2\frac{5}{8}, 2.6$	**24.** $0.5, -\frac{1}{7}, -0.2, \frac{1}{3}$

Show all work necessary to solve the following questions.

25. James answered 14 items correctly on a 16 item quiz. What percent did he answer correctly?	**26.** Emily made 75% of the baskets she attempted. If she made 9 baskets, how many attempts did she make?
27. A parallelogram has side lengths of 7 inches and 11 inches. Draw, label and find the perimeter of this parallelogram.	**28.** A circle has a radius of 2 meters. a) Find the exact circumference of this circle in terms of π. b) Find the area of this circle, to the nearest square meter.

29. List the *integers* that satisfy the following inequalities.
 	
  a. $-2 \le x \le 4$
 	
  b. $-4 < x < 3$
	30.
	  a. Find the area of the right triangle.
	  b. Find the length of the hypotenuse to the *nearest tenth of an inch*.
	
	5in
	
	10in
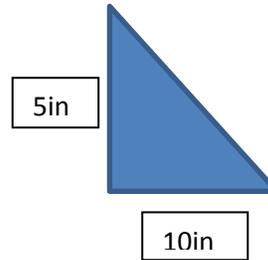
31. Find the volume of a rectangular prism that is 10 cm long, 3 cm wide, and 2 cm high. Please draw and label the prism.	**32.** Find the surface area of a rectangular prism that is 6 ft long, 2 ft wide, and 5 ft high. Please draw and label the prism.
33. The width of a rectangle is 3 inches less than twice the length. If the length of the rectangle is represented by L, write an algebraic expression to represent the width.	**34.** Elizabeth is x years old. Her brother Jim is 2 years older than 3 times Elizabeth's age. Write an algebraic expression to represent Jim's age.

35. At a Fourth of July barbecue, Mr. Adams cooked 3 times as many cheeseburgers as hamburgers. If he cooked a total of 72 burgers, how many of each did he make?

36. In last year's graduating class, there were 30 more boys than girls. There were a total of 180 graduates. How many boys are in the class? How many girls are in the class?

37. Find the mean, median and mode for the set of data.

$$\{10, 11, 18, 24, 30\}$$

38. Find the mean, median and mode for the set of data.

$$\{4, 8, 9, 9, 10, 14, 16\}$$

39. The equation of a line is $y = 3x + 2$.

a) What is the slope of the line?

b) What is the y-intercept?

40. The equation of a line is $6x + 2y = 8$.

a) What is the slope of the line?

b) What is the y-intercept?

41. Solve for the variable.	**42.** Solve for the variable:
$3x + 8 = 29$	$2x + 3x - 4x = 18$
43. Solve for the variable:	**44.** Solve for the variable.
$10x + 48 = 15x + 36$	$$\frac{x}{2} = \frac{x-4}{3}$$

45. Use the grid below to draw the graph of the following equation.

$y = 2x - 5$