



THE KNOX SCHOOL

Math 8 Pre-Algebra 2020 Summer Assignment

Directions: You must show all work, even for multiple choice. Any graphing problem should be done without a graphing calculator.

Due Date: First day of school! You will be held accountable for this material upon your return to school. Yes, that means a test or a quiz on this material is going to happen.

1. Write the number below in standard form.
"Six hundred four thousand, seven hundred twenty-three."
2. The population of a city was 37,683 in 2010. This was 4,795 less than the population in 2000. Find the population of the town in 2000.
3. A train traveled 1,568 miles nonstop, traveling 95 miles each hour except the last hour. How many miles did it travel in the last hour of its trip?
4. Find the value of the expression below.
 $2^4 - 14^3$

5. Fill in the boxes with two consecutive numbers that makes the statement true.

130 is between - ² and ²

6. Simplify the expression below.

$$4 + 9(2^3 - 5)$$

7. Simplify the expression below.

$$\frac{6^2 + (11-7)^3 \div 2}{5-1}$$

8. Give the prime factorization of 1,008.

9. What is the greatest common factor of 84 and 96?

10. What is the least common multiple of 9 and 48?

11. Place a <, >, or = symbol in the circle to make the statement true.

$$|5| \bigcirc |-16|$$

For questions 12 & 13, find each sum or difference.

12. $18 + (-23)$

13. $-4 - (-19)$

For questions 14 & 15, find each product or quotient.

14. $-4(-11)$

15. $24 \div (-6)$

16. Simplify the expression below.

$$(2 - 8)^2 \div (-3)$$

17. Simplify the expression below.

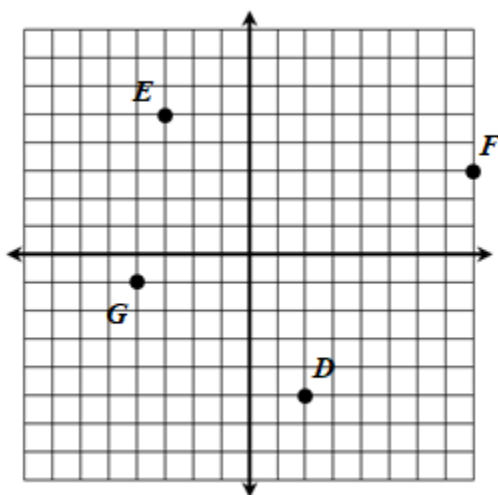
$$\frac{-6 + (-3) \cdot 4^2}{12 - (-6)}$$

18. The temperature dropped 24 degrees in 8 hours. Write an expression using integer operations to find the change in temperature each hour.

19. Carol had \$497 in her bank account. If \$912 is withdrawn for her mortgage payment, find the new balance in her account.

20. A plant manufactured 1,207 vehicles in 2009 and 955 vehicles in 2013. Find the average change in the number of vehicles manufactured each year.

Use the graph below to solve 21-23



21. Write the coordinates of each point on the graph as an ordered pair.

22. What point lies in Quadrant I?

23. What point lies in Quadrant III?

Evaluate. For 24 - 26, write each answer as a fraction in simplest form. Use a mixed number when possible.

24. $\frac{5}{6} + 1\frac{7}{15}$

25. $1\frac{1}{2} - \frac{3}{8} + 2\frac{1}{12}$

26. $1\frac{17}{18} \cdot \left(\frac{4}{3} - \frac{8}{15}\right)$

Evaluate. For 27 - 29, write each answer as a decimal.

27. $21.253 - 9.98$

28. 0.74×12.55

29. $\frac{45.2}{1.6}$

30. Callie is buying a TV that costs \$648.87 in total with tax. If she pays for the TV in four equal monthly payments, how much, to the nearest cent, will she pay each month?

31. Write as a mixed number and improper fraction in simplest form:
5.76

32. Write as a decimal:

$1\frac{3}{16}$

Evaluate 33 - 34 using the given variable replacements.

33. $(p + q^2) + pq$ (if $p = 7$ and $q = -5$)

34. $\frac{ab}{a-b}$ (if $a = -12$ and $b = 4$)

Translate each expression for 35 - 36.

35. "The quotient of 50 and a number w "

36. "Fourteen fewer than a number k "

Simplify 37 - 38 by combining like terms.

37. $2a + 16 - 5a$

38. $11 + 5w - 8w - 24 + w$

Simplify 39 - 40 using the distributive property.

39. $2(3 - 16)$

40. $7(m + 6)$

Simplify 41 - 42 completely.

$$41. -17p + 2(5 - 3p)$$

$$42. 2(-8a + b) + 3(b - a)$$

For 43 - 44, factor each expression using a GCF.

$$43. 14n + 14$$

$$44. 48r - 18s$$

Solve 45 - 46. Show all work and check each solution.

$$45. x - 6 = -1$$

$$46. 13 = r \div -3$$

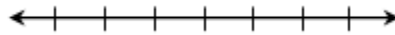
For 47 - 48. Write an equation to model the problem using a variable, then solve.

47. Miquel worked 5 days last week. If he worked 7.2 hours on average each day. How many hours did he work for a week?

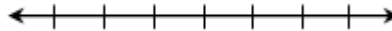
48. Eliza and her mother have a combined age of 51 years. If the mother is 39 years old. How old is Eliza?

For 49 - 50. Solve and graph the solution to each inequality

49. $-12p \leq -12$



50. $c - (-8) \leq 10$



For 51 - 52. Translate the inequality using a variable. DO NOT SOLVE.

51. "The sum of a number and 5 is greater than 23"

52. "One-third of a number is at most 12"

53. Write the value below as a decimal.
1.36%

54. Write the value below as a percent.

$$\frac{14}{25}$$

55. Write the value below as a fraction in simplest form.

55%