

May 20, 2021

Parents,

As you may know it is very easy for students to lose math skills over the summer. In an effort to help decrease this “summer slide” in math, students will be issued a few assignments on their mymathlab.com Pre-Algebra class from this past school year. These assignments will be short and sweet, but designed to help your student retain what they have learned from this school year.

These summer assignments will count as your student’s first homework assignments in the first quarter of the 2021-2022 school year. Also, your student will be given a quiz during the first week of school covering the math skills retaught through these assignments. This quiz will count as the first quiz of the first quarter of the new school year.

If your student forgets his/her username and password, OR....

If your student does not have a mymathlab account yet, please download the PDF of the assignments from the HBCS website.

Kind Regards,

HBCS Math Department

Student: _____
Date: _____

Instructor: Kathleen Dorsey
Course: 8th Pre-Algebra 20-21

Assignment: Summer Prep for Algebra I

1. Insert $<$, $>$, or $=$ in the space provided to make the statement true.

$$9 _ _ 8$$

$$9 \underline{\hspace{2cm}} 8$$

2. Is the following statement true or false?

$$9 + 4 \geq 9(4)$$

- False
 True
-

3. Choose which group of sets the following number belongs to. Be sure to account for ALL sets.

$$-3$$

- A. integers, rational numbers, real numbers
 B. whole numbers, integers, irrational numbers, natural numbers, real numbers
 C. integers, natural numbers, real numbers
 D. whole numbers, integers, rational numbers, natural numbers, real numbers
-

4. Choose which group of sets the following number belongs to. Be sure to account for ALL sets.

$$-7$$

- A. integers, rational numbers, real numbers
 B. whole numbers, integers, rational numbers, natural numbers, real numbers
 C. integers, natural numbers, real numbers
 D. whole numbers, integers, irrational numbers, natural numbers, real numbers
-

5. Choose which group of sets the following number belongs to. Be sure to account for ALL sets.

$$-\frac{5}{8}$$

- A. real numbers, rational numbers
 B. real numbers, irrational numbers
 C. real numbers, rational numbers, natural numbers
 D. rational numbers, natural numbers, integers
 E. irrational numbers, natural numbers
-

6. Choose which set or sets the following number belongs to. Be sure to account for ALL sets.

$$\sqrt{8}$$

- A. rational numbers, real numbers
 B. irrational numbers
 C. real numbers
 D. rational numbers
 E. irrational numbers, real numbers
-

7. Insert $<$, $>$, or $=$ in the space provided to make a true statement.

$$|-6| \underline{\quad} |-7|$$

$$|-6| \underline{\hspace{2cm}} |-7|$$

8. Insert $<$, $>$, or $=$ in the appropriate space to make a true statement.

$$|0| \underline{\quad} |-7|$$

$$|0| \text{ (1) } \underline{\hspace{2cm}} |-7|.$$

- (1) $<$
 $>$
 $=$
-

9. Which of the following is an example of an irrational number?

Choose the correct answer below.

- A. $\frac{1}{3}$
 B. -3
 C. 0
 D. $\sqrt{5}$
-

10. What is the definition of $|a|$?

Choose the correct answer below.

- A. All values of a are real numbers.
 B. Absolute value
 C. The distance between a and zero on the number line
 D. $+a$ and $-a$
-

11. Write the number as a product of primes.

$$52$$

$$52 = \underline{\hspace{2cm}}$$

12. Type the given number as a product of prime numbers.

24

$$24 = \underline{\hspace{2cm}}$$

13. Write the number as a product of primes.

12

$$12 = \underline{\hspace{2cm}}$$

14. Multiply.

$$\frac{2}{7} \cdot \frac{3}{5}$$

$$\frac{2}{7} \cdot \frac{3}{5} = \underline{\hspace{2cm}} \text{ (Type an integer or a simplified fraction.)}$$

15. Multiply.

$$\frac{5}{8} \cdot \frac{4}{3}$$

$$\frac{5}{8} \cdot \frac{4}{3} = \underline{\hspace{2cm}} \text{ (Type a simplified fraction.)}$$

16. Divide as indicated. Write the answer in lowest terms.

$$\frac{1}{3} \div \frac{7}{15}$$

$$\frac{1}{3} \div \frac{7}{15} = \underline{\hspace{2cm}}$$

17. Divide as indicated. Write the answer in lowest terms.

$$\frac{1}{3} \div \frac{7}{15}$$

$$\frac{1}{3} \div \frac{7}{15} = \underline{\hspace{2cm}}$$

18. Multiply as indicated. Write the answer in lowest terms.

$$5\frac{1}{4} \cdot \frac{1}{2}$$

$$5\frac{1}{4} \cdot \frac{1}{2} = \underline{\hspace{2cm}} \text{ (Type an integer or a simplified fraction.)}$$

19. Add the fractions. Reduce the answer to lowest terms.

$$\frac{1}{10} + \frac{9}{10}$$

$$\frac{1}{10} + \frac{9}{10} = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

20. Subtract the fractions. Reduce the answer to lowest terms.

$$\frac{4}{11} - \frac{2}{11}$$

$$\frac{4}{11} - \frac{2}{11} = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

21. The circle below represents a whole, or 1. Use subtraction to determine the unknown part of the circle.

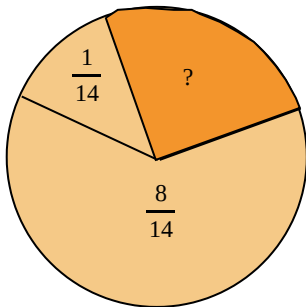
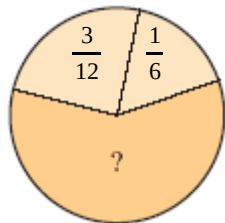


Figure not drawn to scale.

The unknown part of the circle is .
(Type an integer or a simplified fraction.)

22. The circle below represents a whole, or 1. Use subtraction to determine the unknown part of the circle.



The unknown part of the circle is .
(Type an integer or a simplified fraction.)

23. Perform the following operations. Write your answer in lowest terms.

$$\frac{3}{5} - \frac{4}{15} + \frac{3}{10}$$

$$\frac{3}{5} - \frac{4}{15} + \frac{3}{10} = \underline{\hspace{2cm}}$$

(Simplify your answer. Type an integer, proper fraction, or mixed number.)

24. The fractions $\frac{2}{3}$ and $\frac{3}{2}$ are called _____.
-

Choose the correct answer below.

- A. products
- B. factors
- C. equivalent
- D. reciprocals
-

25. Which of the following is an example of a quotient?
-

Choose the correct answer below.

- A. $5 + 9$
- B. $9 - 5$
- C. 5×9
- D. $\frac{5}{9}$
-

26. Evaluate the following expression and enter it in numerical form.

$$3^4$$

$$3^4 = \underline{\hspace{2cm}}$$

27. Evaluate.

$$1^{10}$$

$$1^{10} = \underline{\hspace{2cm}}$$

28. Evaluate.

$$13^1$$

$$13^1 = \underline{\hspace{2cm}}$$

29. Evaluate the following expression.

$$\left(\frac{6}{7}\right)^2$$

$$\left(\frac{6}{7}\right)^2 = \underline{\hspace{2cm}} \text{ (Type an integer or a fraction. Simplify your answer.)}$$

30. Evaluate the following expression.

$$\left(\frac{5}{7}\right)^2$$

$$\left(\frac{5}{7}\right)^2 = \underline{\hspace{2cm}} \quad (\text{Type an integer or a fraction. Simplify your answer.})$$

31. Simplify the given expression and enter in numerical form.

$$8 + 7 \cdot 2$$

$$8 + 7 \cdot 2 = \underline{\hspace{2cm}}$$

32. Simplify the expression.

$$8 \cdot 7 - 3 \cdot 4$$

$$8 \cdot 7 - 3 \cdot 4 = \underline{\hspace{2cm}}$$

33. Simplify the given expression.

$$3 + (3 - 2) + 7^3$$

$$3 + (3 - 2) + 7^3 = \underline{\hspace{2cm}}$$

34. Simplify the given expression.

$$5 \cdot 7^3$$

$$5 \cdot 7^3 = \underline{\hspace{2cm}}$$

35. Simplify the expression.

$$\frac{14 - 2 \cdot 5}{4 - 2}$$

$$\frac{14 - 2 \cdot 5}{4 - 2} = \underline{\hspace{2cm}}$$

36. Evaluate the following expression when $x = 3$ and $z = 5$.

$$\frac{z}{4x}$$

The answer is $\underline{\hspace{2cm}}$. (Type an integer or a fraction. Simplify your answer.)

37. Evaluate the expression when $x = 2$.

$$4x - 6$$

The value of $4x - 6$ when $x = 2$ is $\underline{\hspace{2cm}}$.

38. Evaluate the expression when $y = 1$.

$$4y^2$$

$$4y^2 = \underline{\hspace{2cm}}$$

39. Evaluate the expression if $x = 6$, $y = 3$, and $z = 2$

$$\frac{x}{z} + 5y$$

The answer is . (Type an integer or a fraction. Simplify your answer.)

40. Evaluate the given expression when $x = 17$ and $y = 4$.

$$x^2 - 5y + x$$

The answer is .

41. Determine whether 17 is a solution of the equation $5x + 5 = 92$.

Is 17 a solution?

- Yes
 No
-

42. Is 6 a solution to the equation $x + 8 = x + 8$?

- Yes
 No
-

43. Is 0 a solution of $x = 2x + 13$?

Choose the correct answer below.

- No
 Yes
-

44. Which of the following is a correct statement?

Choose the correct answer below.

- A.** An expression has an equal symbol and an equation does not.
 B. Expressions are solved and equations are not.
 C. An equation has an equal symbol and an expression does not.
-

45. $3(x^2 + 5)$ is an example of which of the following?

Choose the correct answer below.

- A. a solution
- B. exponential notation
- C. an algebraic equation
- D. an algebraic expression

46. Add.

$$-8 + (-9)$$

$$-8 + (-9) = \underline{\hspace{2cm}}$$

47. Add.

$$8 + (-8)$$

$$8 + (-8) = \underline{\hspace{2cm}}$$

48. Add.

$$-15 + 18$$

$$-15 + 18 = \underline{\hspace{2cm}}$$

49. Add the following.

$$76 + (-95)$$

The answer is .
(Simplify your answer. Type an integer or a fraction.)

50. Add.

$$8.9 + (-1.2)$$

$$8.9 + (-1.2) = \underline{\hspace{2cm}} \text{ (Type an integer or a decimal.)}$$

51. Add.

$$(-13) + 6 + (-5)$$

$$(-13) + 6 + (-5) = \underline{\hspace{2cm}}$$

52. Add.

$$-19 + (-21) + (-17)$$

$$-19 + (-21) + (-17) = \underline{\hspace{2cm}}$$

53. Add.

$$(-11) + 7 + (-5)$$

$$(-11) + 7 + (-5) = \underline{\hspace{2cm}}$$

54. The low temperature in Eau Claire, Wisconsin, was -12° last night. During the day it rose only 4° . Find the high temperature for the day.

The high temperature for the day was _____ $^{\circ}$.

55. During the golf tournament, the winner scored -6 , -6 , and -5 . What was the winner's overall score?

What was the winner's overall score?

56. Subtract.

$$-2 - 8$$

$$-2 - 8 = \underline{\hspace{2cm}}$$

57. Subtract.

$$1 - (-9)$$

$$1 - (-9) = \underline{\hspace{2cm}}$$

58. Subtract.

$$-4 - (-13)$$

$$-4 - (-13) = \underline{\hspace{2cm}}$$

59. Simplify.

$$-16 - (-16) + (-7) - 23$$

$$-16 - (-16) + (-7) - 23 = \underline{\hspace{2cm}}$$

60. Simplify the expression.

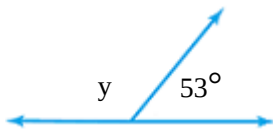
$$7 - 14 + (-10) - 6 - 10$$

$$7 - 14 + (-10) - 6 - 10 = \underline{\hspace{2cm}}$$

61. In a series of plays, a football team gains 9 yards, loses 3 yards, and then loses another 18 yards. What is their total gain or loss of yardage?

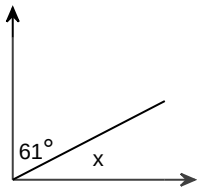
The total net yardage is _____ yards.

62. Find the unknown angle.



$$y = \underline{\hspace{2cm}}^{\circ}$$

63. Find the unknown complementary angle.



$x =$ _____ $^{\circ}$ (Simplify your answer.)

64. Decide whether the given number is a solution of the given equation.

$$x - 6 = 5; \quad -1$$

Is -1 a solution to $x - 6 = 5$?

- No
 Yes

65. Two angles whose sum is 180° are called _____ angles.

Choose the correct answer below.

- A. complementary
 B. right
 C. supplementary
 D. straight

66. Multiply.

$$-3(4)$$

$$-3(4) = \underline{\hspace{2cm}}$$

67. Multiply.

$$-8(-2)$$

$$-8(-2) = \underline{\hspace{2cm}}$$

68. Multiply.

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

$$-\frac{1}{3} \left(-\frac{5}{8} \right) = \underline{\hspace{2cm}} \text{ (Type a simplified fraction.)}$$

69. Multiply.

$$-\frac{3}{8}\left(-\frac{16}{21}\right)$$

$$-\frac{3}{8}\left(-\frac{16}{21}\right) = \underline{\hspace{2cm}}$$

(Type an integer or a simplified fraction.)

70. Multiply.

$$\frac{2}{3}\left(-\frac{8}{9}\right)$$

$$\frac{2}{3}\left(-\frac{8}{9}\right) = \underline{\hspace{2cm}}$$

(Type an integer or a simplified fraction.)

71. Multiply.

$$-\frac{56}{49}\left(\frac{7}{40}\right)$$

$$-\frac{56}{49}\left(\frac{7}{40}\right) = \underline{\hspace{2cm}}$$

(Type an integer or a simplified fraction.)

72. Multiply.

$$(-3)(2)(-2)(-5)$$

$$(-3)(2)(-2)(-5) = \underline{\hspace{2cm}}$$

73. Evaluate.

$$(-6)^2$$

$$(-6)^2 = \underline{\hspace{2cm}}$$

74. Evaluate.

$$(-5)^2$$

$$(-5)^2 = \underline{\hspace{2cm}}$$

75. Find the multiplicative inverse (or reciprocal) of 10.

What is the multiplicative inverse of 10?

 (Type an integer or a simplified fraction.)

76. Find the reciprocal.

$$\frac{6}{7}$$

The reciprocal of $\frac{6}{7}$ is _____. (Type an integer or a fraction.)

77. Find the reciprocal or multiplicative inverse.

$$-20$$

The answer is _____.

78. Find the reciprocal or multiplicative inverse.

$$-\frac{3}{14}$$

The answer is _____. (Type an integer or a simplified fraction.)

79. Divide.

$$\frac{0}{6}$$

Select the correct choice and, if necessary, fill in the answer box to complete your choice.

- A. $\frac{0}{6} =$ _____ (Type an integer or a fraction. Simplify your answer.)
- B. The expression is undefined.
-

80. Divide.

$$\frac{-9}{0}$$

Select the correct choice and, if necessary, fill in the answer box to complete the choice.

- A. $\frac{-9}{0} =$ _____ (Type an integer or a fraction. Simplify your answer.)
- B. The expression is undefined.
-

81. Divide.

$$\frac{2}{5} \div \left(-\frac{1}{6}\right)$$

$\frac{2}{5} \div \left(-\frac{1}{6}\right) =$ _____ (Type an integer or an improper fraction.)

82. Simplify.

$$\frac{-2(-1)}{-3}$$

$$\frac{-2(-1)}{-3} = \underline{\hspace{2cm}} \text{ (Type an integer or a simplified fraction.)}$$

83. Simplify the expression by combining any like terms.

$$8w - 4w + 8w$$

$$8w - 4w + 8w = \underline{\hspace{2cm}}$$

84. Simplify the expression by combining any like terms.

$$6g - 6 - 8 - 6g$$

$$6g - 6 - 8 - 6g = \underline{\hspace{2cm}}$$

85. Simplify the expression. First use the distributive property to remove parentheses.

$$7(d - 4) + 7$$

$$7(d - 4) + 7 = \underline{\hspace{2cm}}$$

86. Simplify the expression. First use the distributive property to remove parentheses.

$$-6(3x - 2y + 7)$$

$$-6(3x - 2y + 7) = \underline{\hspace{2cm}}$$

87. Simplify the expression. First, use the distributive property to remove any parentheses.

$$-(-6y - 8z - 3)$$

Simplify the expression completely.

$$-(-6y - 8z - 3) = \underline{\hspace{2cm}}$$

88. Simplify the expression. First use the distributive property to remove parentheses.

$$6(x + 4) - (3x - 6)$$

$$6(x + 4) - (3x - 6) = \underline{\hspace{2cm}}$$

89. Simplify the expression. First use the distributive property to multiply and remove parentheses.

$$-5(5n - 5) + 3n$$

$$-5(5n - 5) + 3n = \underline{\hspace{2cm}}$$

90. Simplify the expression.

$$-2(3x - 3) + 8x - 4$$

$$-2(3x - 3) + 8x - 4 = \underline{\hspace{2cm}}$$

91. Write the phrase as an algebraic expression and simplify if possible. Let x represent the unknown number.

Twice a number, decreased by four

Write the algebraic expression. Choose the correct answer below.

- $2x - 4$
 $4x + 2$
 $4x - 2$
 $2x + 4$
-

92. Identify the proper name for each of the following.

$2x$, $3x + 5y$, and $5x = 15$

Choose the correct answer below.

- A.** $2x$ is a variable, $3x + 5y$ is a term, and $5x = 15$ is an algebraic expression.
 B. $2x$ is a term, and $3x + 5y$ and $5x = 15$ are both algebraic expressions.
 C. $2x$ is a variable, and $3x + 5y$ and $5x = 15$ are both algebraic expressions.
 D. $2x$ is a term, $3x + 5y$ is an algebraic expression, and $5x = 15$ is an algebraic equation.
-

93. Which of the following are like terms?

$2x$, $2x^3$, $2y$, $3x$, $3y^3$, $2y^2$

Choose the correct answer below.

- A.** $2x^3$ and $2y^3$
 B. $2x$ and $3x$
 C. $2x$ and $2y$
 D. $2y$ and $2y^2$
-

94. For the term $-\frac{1}{3}x^2y^3$, what is the value of the numerical coefficient?
-

Choose the correct answer below.

- A.** $\frac{1}{3}$
 B. $-\frac{1}{3}$
 C. 3
 D. -1
-

95. Solve the equation for x .

$$-3(x - 5) = -2x - 9$$

$x =$ _____

96. Solve the equation for x.

$$4(8 + x) = 3(9 + x)$$

 $x = \underline{\hspace{2cm}}$

97. Solve for the variable.

$$\frac{3}{8}x = \frac{3}{4}$$

 $x = \underline{\hspace{2cm}}$

98. Solve the equation.

$$4(2x + 6) = -50 + 2$$

 $x = \underline{\hspace{2cm}}$

(Simplify your answer.)

99. Solve the equation.

$$7 + 5 = -2(3x - 6)$$

 $x = \underline{\hspace{2cm}}$

100. Solve the equation for x.

$$2x + 5 = 15$$

 $x = \underline{\hspace{2cm}}$

101. Solve the equation for z.

$$2z + 5z = 5z - 9 + 4z$$

 $z = \underline{\hspace{2cm}}$ (Type an integer or a simplified fraction.)

102. Solve the equation.

$$-4y + 8 = -4(2y + 7)$$

 $y = \underline{\hspace{2cm}}$

(Type an integer or a simplified fraction.)

103. Solve the equation.

$$18x - 7 = 5 + 14x$$

 $x = \underline{\hspace{2cm}}$

104. Solve the equation.

$$5x + 6 = -4 + 3x + 24$$

 $x = \underline{\hspace{2cm}}$

105. Complete the table of ordered pairs for the given linear equation. Then plot the ordered pair solutions.

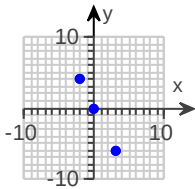
$$x = -2y$$

| x | y |
|---|---|
| | 0 |
| | 3 |
| 4 | |

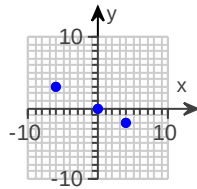
| x | y |
|---|---|
| | 0 |
| | 3 |
| 4 | |

Choose the correct graph of the ordered pair solutions below.

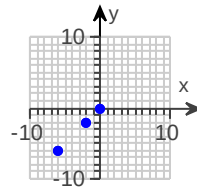
A.



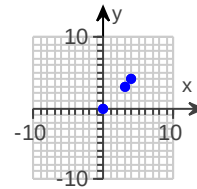
B.



C.



D.



106. For the given equation, find three ordered pairs by completing the table. Then use the ordered pairs to graph the equation.

$$y = x - 5$$

| x | y |
|---|---|
| 0 | |
| 1 | |
| 2 | |

Complete the table.

| x | y |
|---|---|
| 0 | |
| 1 | |
| 2 | |

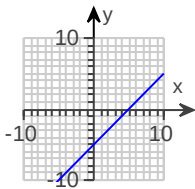
(Type an integer or a simplified fraction.)

(Type an integer or a simplified fraction.)

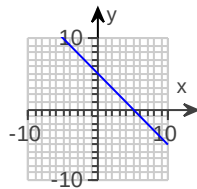
(Type an integer or a simplified fraction.)

Choose the correct graph of $y = x - 5$ below.

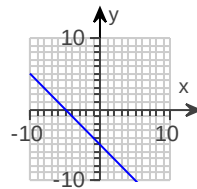
A.



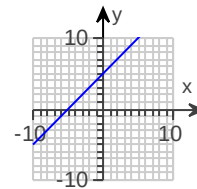
B.



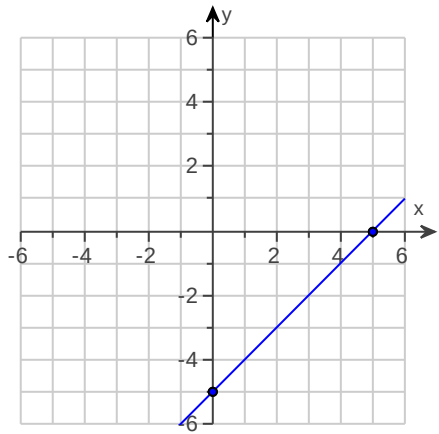
C.



D.



107. Identify the intercepts.



Identify all the x-intercepts.

_____ (Type an ordered pair. Use a comma to separate answers as needed.)

Identify all the y-intercepts.

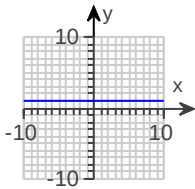
_____ (Type an ordered pair. Use a comma to separate answers as needed.)

108. Match the equation with its graph.

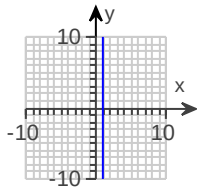
$y = 1$

Choose the correct graph below.

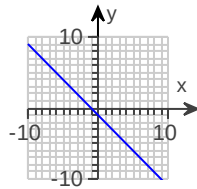
A.



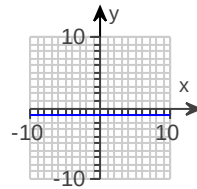
B.



C.



D.

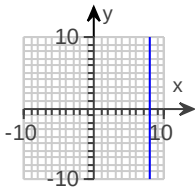


109. Match the equation with its graph.

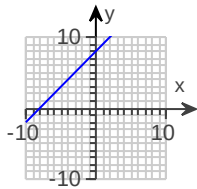
$x = -8$

Choose the correct graph below.

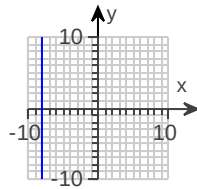
A.



B.



C.



D.

