Semester 1 CHAT Pre-Algebra Extra Credit

You MUST show all work to get credit for a correct answer. Circle all answers.

This packet is worth:

10 extra credit points for scores of 50% - 65%

15 extra credit points for scores of 66% - 80%

18 extra credit points for scores of 81% - 90%

20 extra credit points for scores of 91% - 100%

Pre-Algebra Semester 1 Practice

1. Evaluate xy when $x = 30$ and $y = 6$.

A. 5

B. 24

C. 36

D. 180

2. Which expression is equivalent to x^5?

A. $5x$

B. $5 + x$

C. $x + x + x + x + x$

D. $x \cdot x \cdot x \cdot x \cdot x$

3. In math class, we follow the order of operations when evaluating expressions. Which is the <u>second</u> operation a student would perform to evaluate the expression below?

$$15 - 2 \cdot 3 + 4$$

A. addition

B. division

C. subtraction

D. multiplication

4. The table below shows the yardage gained and lost on the first 8 plays of a football game.

Play	Yardage
1	+7
2	−3
3	+1
4	−8
5	+5
6	+6
7	−4
8	+2

What is the order of the yardage from least to greatest?

A. $-8, \ -4, \ -3, \ +1, \ +2, \ +5, \ +6, \ +7$

B. $-8, \ +7, \ +6, \ +5, \ -4, \ -3, \ +2, \ +1$

C. $+1, \ +2, \ -3, \ -4, \ +5, +6, \ +7, \ -8$

D. $+7, \ -3, \ +1, \ -8, \ +5, \ +6, \ -4, \ +2$

5. What is the value of $|-10| + 4$?

A. -14

B. -6

C. 6

D. 14

6. Eddie's savings account has a balance of $140. He deposits $17 for each of the next five weeks. He withdraws $11 in the final week. He wants to use his savings to buy a game system that costs $210.

   - Does he have enough money to buy the game system?
   - If yes, how much extra money does he have? If no, how much more does he need to save?

A. NO, he needs $4 more

B. NO, he needs $64 more

C. YES, he has $4 extra

D. YES, he has $26 extra

7. What is the value of $-5+9$?

A. -14

B. -4

C. 4

D. 14

8. Calculate the value of $12(-4)$.

A. -48

B. -8

C. 8

D. 48

9. Currently, Nellie has $14 in her savings account. She plans to deposit $5 per week. Her brother currently has $50 in his savings account and plans to withdraw $4 per week. How many weeks will it take until both Nellie and her brother have an equal amount of money in their savings accounts?

(A) 36 weeks

(B) 27 weeks

(C) 7 weeks

(D) 4 weeks

10. Which equation illustrates the commutative property of multiplication?

A. $2 \cdot 5 = 5 \cdot 2$

B. $(2 \cdot 5) \cdot 3 = 2 \cdot (5 \cdot 3)$

C. $2(5+3) = 2(3+5)$

D. $2(5+3) = 2 \cdot 5 + 2 \cdot 3$

11. A mathematics teacher wrote this procedure on the board.

Step 1: $-3(x+7)+4x$

Step 2: $-3x-21+4x$

Step 3: $-3x+4x-21$

Step 4: $x-21$

Which properties justify Step 2 and then Step 3?

A. distributive property, commutative property

B. distributive property, associative property

C. commutative property, distributive property

D. commutative property, associative property

12. Which expression below shows a correct use of the distributive property?

$$5a+7-3(a+4)$$

A. $5a+7-3a+12$

B. $5a+7-3a-12$

C. $5a+7-3a+4$

D. $5a+7-3a+1$

13. Simplify the expression below.

$$-5(k-7)-k+3$$

A. $-6k-4$

B. $-6k+38$

C. $-5k-4$

D. $-5k+38$

14. What is the value of 100^0?

(A) 0

(B) 1

(C) 10

(D) 1000

15. In which of the following is the given value for the variable a solution of the equation?

A. $a+9=12,\ a=-3$

B. $21-b=-4,\ b=25$

C. $91=7c,\ c=14$

D. $\dfrac{d}{-4}=-8,\ d=-32$

16. Solve for x in the equation below.

$$39-x=15$$

A. -54

B. -24

C. 24

D. 54

17. Find the value of w that satisfies the equation below. (Solve for w.)

$$\frac{w}{-3} = 21$$

18. Solve for d in the equation below.

$$9 = d + 4.88$$

19. Which of the following would be the best choice for the first step in solving for b in the equation below?

$$-8 + 2b = 20$$

A. add 8 to both sides of the equation

B. subtract 8 from both sides of the equation

C. multiply both sides of the equation by 2

D. divide both sides of the equation by -2

20. What is the value of x that satisfies the equation $-5x + 10 = 35$? (Solve for x.)

21. Nine less than twice a number is thirty-one. Translate this but do not solve.

22. What is the solution to the equation below?

$$-2(3x + 1) + 7x = 12$$

23. What value of x makes the equation below true? (Solve for x.)

$$3x + 2 = 8x - 13$$

24. A gym charges nonmembers $18 per day to use the tennis courts plus $7 per day to rent equipment. Members pay $600 annual dues plus $5 per day for equipment rental. How many days must a nonmember and a member of the gym use the tennis courts in one year so that they both pay the same amount?

A. 20 days

B. 26 days

C. 30 days

D. 46 days

25. Which equation has exactly one solution?

A. $x + 7 = x - 2$

B. $2(x - 6) = 2x - 12$

C. $3(x + 2) = 2x - 5$

D. $7x + 13 = 13 + 7x$

26. Which expression is equivalent to $\dfrac{x^8}{x^2}$?

A. x^4

B. x^6

C. x^{10}

D. x^{16}

27. Simplify $7^6 \cdot 7^{-2}$.

A. 7^{-12}

B. 7^{-3}

C. 7^4

D. 7^8

28. Which expression is equivalent to 10^8 ?

A. $\left(10^2\right)^4$

B. $(-10)^{-8}$

C. $10^2 \cdot 10^4$

D. $\dfrac{10^{16}}{10^2}$

29. What is the prime factorization of 36?

A. $2 \cdot 3^2$

B. $2^2 \cdot 3^2$

C. 6^2

D. 18^2

30. Find the greatest common factor (GCF) of 24 and 54.

_____

31. Write the fraction below in simplest form.

$$\frac{12a^3b^2}{30ab^3}$$

A. $\dfrac{2a^2}{5b}$

B. $\dfrac{2a^4}{5b^5}$

C. $\dfrac{4a^2}{10b}$

D. $\dfrac{4a^4}{10b^5}$

32. Find the least common multiple (LCM) of 20, 44, and 88.

    _____

33. What is 2.78×10^{-5} written in standard form?

    A. 0.00000278
    B. 0.0000278
    C. 27,800
    D. 278,000

34. What is 240,000 written in scientific notation?

    A. 2.4×10^{-5}
    B. 2.4×10^{-4}
    C. 2.4×10^{4}
    D. 2.4×10^{5}

35. Which number is NOT equivalent to $2\frac{1}{3}$?

    A. $2.\overline{3}$
    B. 2.3
    C. $2\frac{3}{9}$
    D. $\frac{7}{3}$

36. What fraction is equivalent to 0.625?

    A. $\frac{25}{4}$
    B. $\frac{13}{20}$
    C. $\frac{5}{8}$
    D. $\frac{1}{16}$

37. What is the decimal equivalent of $\frac{11}{3}$?

    A. $0.\overline{27}$
    B. $0.2\overline{7}$
    C. 3.6
    D. $3.\overline{6}$

38. Which set of numbers is ordered from least to greatest?

    A. $-3.2, \ -\frac{30}{10}, \ \frac{7}{8}, \ 0.\overline{9}, \ 0.9$
    B. $-3.2, \ -\frac{30}{10}, \ \frac{7}{8}, \ 0.9, \ 0.\overline{9}$
    C. $-\frac{30}{10,} \ -3.2, \ \frac{7}{8}, \ 0.9, \ 0.\overline{9}$
    D. $-\frac{30}{10}, \ -3.2, \ 0.\overline{9}, \ 0.9, \ \frac{7}{8}$

39. Chelsea leaves her house and goes directly toward the mall. She has $1\frac{3}{4}$ miles to go before arriving at her destination. The distance between her house and the mall is $7\frac{1}{2}$ miles. How far has she traveled from her house?

A. $9\frac{1}{4}$ miles

B. $6\frac{3}{4}$ miles

C. $6\frac{1}{4}$ miles

D. $5\frac{3}{4}$ miles

40. Which expression is equivalent to $(4^3)^2$?

(A) 4^1

(B) 4^5

(C) 4^6

(D) 4^9

41. Linda has a ribbon that is $16\frac{2}{3}$ feet long. If she cuts the ribbon into 20 equal pieces, what is the length of each piece?

A. $\frac{4}{5}$ feet

B. $\frac{5}{6}$ feet

C. $3\frac{1}{3}$ feet

D. $4\frac{2}{3}$ feet

42. Solve the given equation for x.

$$-\frac{x}{4} = \frac{7}{2}$$

43. Add: $7.92 + 5.95 + 7.54$

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44. What is the value of $*$? $\dfrac{6}{8} = \dfrac{*}{24}$

[A] 6   [B] 18   [C] 144   [D] 24

45. Write $4\dfrac{3}{4}$ as an improper fraction.

[A] $\dfrac{43}{4}$ [B] $\dfrac{19}{4}$ [C] $\dfrac{4}{19}$ [D] $\dfrac{4}{43}$

46. Write $\dfrac{38}{7}$ as a mixed number.

[A] $1\dfrac{5}{7}$ [B] $1\dfrac{6}{7}$ [C] $5\dfrac{7}{3}$ [D] $5\dfrac{3}{7}$

47. Multiply: $\dfrac{6}{5} \times \dfrac{5}{9}$

[A] $4\dfrac{1}{6}$ [B] $\dfrac{2}{3}$ [C] 1   [D] $\dfrac{11}{14}$

48. Divide: $2\dfrac{2}{7} \div 3\dfrac{3}{4}$

[A] $\dfrac{8}{21}$ [B] $\dfrac{3}{14}$ [C] $\dfrac{64}{105}$ [D] $8\dfrac{4}{7}$

49. Find the LCD: $\dfrac{3}{7}, \dfrac{10}{21}, \dfrac{1}{6}$

[A] 84   [B] 42   [C] 21   [D] 126

50. Add: $4\dfrac{1}{4} + 1\dfrac{1}{9}$

[A] $5\dfrac{2}{13}$ [B] 6   [C] $8\dfrac{3}{13}$ [D] $5\dfrac{13}{36}$

51. Complete: 50.4 mm = _____ cm

[A] 5040   [B] 5.04   [C] 504   [D] 0.504

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52. Add: $(-6) + 4 + (-6)$

[A] –8   [B] –4   [C] 8   [D] 16

53. Solve: $x - 2 = 6$

[A] 4   [B] –4   [C] –8   [D] 8

54. Multiply: $(-3)(7)(-6)$

[A] 126   [B] 2   [C] –2   [D] –126

55. Simplify: $(-10)^2$

[A] –100   [B] 100   [C] –20   [D] 20

56. Simplify: $(18 + 7 \cdot 18 \div 7 - 15) \div 7$

[A] 11   [B] –4   [C] 3   [D] 449

57. Subtract: $(-7) - (-4)$

[A] -11   [B] -3   [C] 3   [D] 11

58. Simplify: $-(-5) - 5(9 - 8)$

[A] –32   [B] –10   [C] 0   [D] –58

59. Evaluate $a - b + c$ if $a = -7$, $b = -1$, and $c = -4$.

[A] –12   [B] –10   [C] –4   [D] –2

60. Evaluate $\dfrac{y}{2x} - z$ for $x = 2$, $y = 16$, and $z = 1$.

[A] 3   [B] 9   [C] –6   [D] 5

61) What is the correct way to write 9 x 9 x 9 in exponential form? a) 3^9 b) 18 c) 9^3 d) 81	62) Which comparison is true? a) 148,310 > 148,301 b) 148,301 > 148,310 c) 418,310 < 418,301 d) 418,301 > 481,301
63) Solve for x $\quad$ 0.015 ÷ 5 = x a) 3 b) 0.3 c) 0.03 d) 0.003	64) Identify the complete, correct list of the factors of 18 a) 1, 2, 9, 18 b) 1, 3, 6, 18 c) 1, 2, 3, 6, 9,18 d) 1, 2, 3, 4, 6, 9, 18
65) What is $2\frac{5}{7}$ as an improper fraction? a) $\frac{17}{5}$ b) $\frac{19}{7}$ c) $1\frac{3}{5}$ d) $2\frac{5}{7}$	66) How is $\frac{17}{3}$ written as a mixed number? a) $5\frac{3}{2}$ b) $5\frac{6}{10}$ c) $5\frac{2}{3}$ d) $4\frac{1}{3}$
67) What is the best estimate for 14.6 x 3.9? Use compatible numbers a) 55 b) 60 c) 42 d) 56	68) Estimate the sum of 65.2 + 12.7 to the nearest whole number a) 75 b) 76 c) 78 d) 79

69) The trail is $\frac{9}{10}$ of a mile long. It is marked by 6 evenly spaced markers. How far apart are the markers placed? Simplify your answer

  a) $\frac{3}{4}$ miles

  b) $\frac{1}{18}$ miles

  c) $\frac{3}{20}$ miles

  d) $\frac{9}{60}$ miles

70) Identify the prime factorization for 42

  a) 6 x 7
  b) 2 x 3^2
  c) 7 x 3 x 2
  d) 2 x 21

71) Simplify

  $3^3 + 4(8-5) \div 6$

  a) 6.5
  b) 29
  c) 11
  d) 34.16

72) Simplify

  $7 + 5[(3+2)^2 - (2^3+1)]$

  a) 22
  b) 36
  c) 97
  d) 87

73) What are the next two numbers in the pattern

  2, 7, 22, 67, ___, ___

  a) 95, 120
  b) 91, 131
  c) 202, 607
  d) 150, 2918

74) Convert 0.64 to a fraction

  a) $\frac{1}{5}$

  b) $\frac{1}{32}$

  c) $\frac{1}{64}$

  d) $\frac{16}{25}$

75) Simplify

$7+(6 \times 5^2+3)$

a) 70
b) 85
c) 91
d) 160

76) Which of the following is a translation of "six less than three times a number x"

a) 3x-6
b) 6x-3
c) 6-3x
d) 3-6x

77) Compare the quantities

$\dfrac{2}{3} \times \dfrac{1}{4}$ and $\dfrac{1}{3} \times \dfrac{3}{4}$

a) <
b) >
c) =
d) none of the above

78) How many seconds are in 2 hours and 2 minutes?

a) 240
b) 7,320
c) 8,400
d) 2,400

79) Evaluate $\dfrac{3x-4y}{2x}$ if x = 4 and y = -2

a) 2
b) $\dfrac{1}{2}$
c) $\dfrac{2}{5}$
d) $\dfrac{5}{2}$

80) Reduce answer to the lowest terms

$\dfrac{2}{5} \times \dfrac{2}{7} \times \dfrac{5}{8}$

a) $\dfrac{1}{2}$
b) $\dfrac{2}{5}$
c) $\dfrac{1}{14}$
d) $\dfrac{2}{28}$

81) Simplify

$(8 - (+2)) \times (7+(-2)) =$

a) 30
b) 50
c) 70
d) 90

82) What is the mathematical expression for "the $100 earned was split between all the people and each got $12.50"?

a) 100 − p = 12.50
b) 100/p = 12.50
c) 100p = 12.50
d) 100p + 12.50

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83) Find the greatest common factor (GCF) of 28 and 30

a) 1
b) 2
c) 5
d) 6

84) What is the correct word form of 7.41?

a) seven and forty-one hundredths
b) seven and forty-one thousandths
c) seven point forty-one
d) seven and forty-one tenths

85) What is the correct way to write 3^3 in expanded form?

a) 9
b) 3 x 3 x 3
c) 3 x 3
d) 27

86) Candace is going to order 10 pizzas for her pool party. Each pizza costs $8.95. How much does it cost to buy 10 pizzas?

a) $895.00
b) $0.89
c) $895.50
d) $89.50

87) When Jacob checked his email, 5/18 of the emails were from friends, 5/24 was junk mail, and 1/4 were from his family. What fraction of the emails were from his family and friends? Reduce to lowest terms

a) $1\frac{1}{12}$

b) $\frac{11}{24}$

c) $\frac{1}{6}$

d) $\frac{19}{36}$

88) In 2008, the average rainfall in Seattle, Washington was 1.9 inches in September, 3.3 inches in October and 5.7 inches in November. Use rounding to estimate how many inches of rainfall fell in total during those months.

a) 11 inches
b) 10 inches
c) 9 inches
d) 4 inches

89) Betsy had $\frac{3}{4}$ of her book completed. What decimal is this equal to?

a) 0.75
b) 7.5
c) 0.075
d) 0.0075

90) What is the correct order from least to greatest for the following numbers: 33.49, 29.5, 29.84, and 33

a) 33.49, 33, 29.84, and 29.5
b) 29.5, 29.84, 33.49, and 33
c) 29.84, 29.5, 33, and 33.49
d) 29.5, 29.84, 33, and 33.49

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