

# Practice Cumulative Evaluation A3 for Integrated Algebra 1 – Form 1

Subunit A3: Lesson 1.3 (Arithmetic of Numbers) + Review of Subunits A1 & A2

## Ground Rules for Test Completion

1. Present your work in a neat and organized manner. Use complete sentences whenever you are asked to make a statement.
2. SHOW YOUR WORK: Partial credit will be awarded on the basis of the work shown.
3. Make sure you answer ALL parts of problems.



## Review and Extension Questions for Subunit A1:

1. [4] Determine whether each of the following statements is true or false.  
a.  $2 + 5^0 \leq (2 + 5)^0$                       b.  $12 - 8 \div 4 > (12 - 8) \div 4$
2. [2] Write  $3 \cdot 4 \cdot 5 \cdot 3 \cdot 8 \cdot 4 \cdot 4 \cdot 8 \cdot 5$  in Exponential Form.
3. [4] Evaluate each of the following:  
a.  $|-76| - |22|$       b.  $|-76 - 22|$

## Review and Extension Questions for Subunit A2:

4. [6] Using prime factorization, find the GCF & LCM of 78 and 45.
5. [12] Perform the indicated operations. Write your answers in **lowest terms**.  
a.  $2\frac{7}{16} \cdot \frac{2}{3}$               b.  $4\frac{4}{15} + 8\frac{37}{40}$               c.  $6\frac{5}{12} - 3\frac{7}{8}$
6. Answer any 2 of the 3 application problems below. Give your answers in complete sentences. (You may do the remaining question for extra credit.)
  - a. [5] Find the length of baseboard remaining after  $48\frac{7}{16}$  in. from a piece that was originally 8 ft. (96 in.) long. **Give your answer as a mixed number in lowest terms.**
  - b. [5] How many complete  $15\frac{3}{4}$  cm long pieces of pipe can be cut from a pipe that is 120 cm long?
  - c. [5] ABC Gum stock plummeted  $25\frac{5}{8}$  points today to close at  $46\frac{3}{4}$  points. What was ABC Gum’s point value before the drop? **Give your answer as a mixed number in lowest terms.**

## Questions for Subunit A3:

7. [18] Simplify the following expressions:  
a.  $(-11) \cdot (-24)$               b.  $-31 - (-14)$               c.  $(-156) \div (-12)$   
d.  $(-91) \div 7$               e.  $-54 + 92$               f.  $(-15) \cdot 32$
8. Show how to calculate the value of each expression below **using the Order of Operations**. **NOTE: No credit will be awarded unless work is shown.**  
a. [3]  $\frac{3}{8}(32 - 24 \div 3)$               b. [3]  $17 + 5 \cdot 4$               c. [4]  $81 \div (4 - 33^0)^3 + 3$   
d. [4]  $66^1 \div [7 - (6 \cdot 3)]$               e. [5]  $-54 - \frac{18 - (4)(-7)}{42 \div 6 + 9 \cdot 13 \div 3}$               f. [5]  $(34 - 10) \div 2^3 + 7 \cdot [-4]$
9. [3] Plot and label your answers for 8a, 8c, and 8d on the number line below.



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10. [4] Determine whether each of the following statements is true or false.
- The quotient of a non-zero number and its opposite is  $-1$ .
  - The sum of two numbers with opposite signs is positive if the absolute value of the negative number is greater than the absolute value of the positive number.
  - The difference of a two negative numbers is always positive.
  - The product of any three negative numbers is positive.
11. [5] Match each equation in the left column with its corresponding property from the right column:
- $(15 \bullet 6) + (9 \bullet 6) = (15 + 9)6$                       Additive Inverse
  - $x + (y + z) = (x + y) + z$                       Associative Property
  - $(-\frac{6}{7})(-\frac{7}{6}) = 1$                       Commutative Property
  - $13 \bullet 8 = 8 \bullet 13$                       Distributive Property
  - $21 + (-21) = 0$                       Multiplicative Inverse
12. [6] Joe has a \$1500 limit on his DebtXpress card. The outstanding balance on his last statement was \$859. Since then he made a \$100 payment, twice put \$25 worth of gas in his car, and bought 5 DVDs at \$12.95 each plus 6% sales tax. What is Joe's new DebtXpress balance before finance charges? **NOTE: No credit will be awarded unless work is shown.**

### **ANSWER KEY with SOLUTIONS TO SELECTED PROBLEMS**

1a.  $2 + 1 \leq (7)^0 \rightarrow 3 \leq 1$  -- **False**      1b.  $12 - 2 > (4) \div 4 \rightarrow 10 > 1$  -- **True**      2.  $3^2 \bullet 4^3 \bullet 5^2 \bullet 8^2$

3a.  $|-76| - |22| = 76 - 22 = 54$       3b.  $|-76 - 22| = |-98| = 98$

4.  $78 = 2 \cdot 3 \cdot 13$ ;  $45 = 3 \cdot 3 \cdot 5$ . Thus, **GCF = 3 & LCM =  $(2 \cdot 3 \cdot 13) \cdot (3 \cdot 5) = 1170$**

5a.  $\frac{13}{8}$  or  $1\frac{5}{8}$       b.  $13\frac{23}{120}$       c.  $6\frac{5}{12} - 3\frac{7}{8} = 6\frac{10}{24} - 3\frac{21}{24} = 5\frac{34}{24} - 3\frac{21}{24} = 2\frac{13}{24}$

6a.  $96 - 48\frac{7}{16} = 95\frac{16}{16} - 48\frac{7}{16} = 37\frac{9}{16}$ . **The length of baseboard remaining is  $37\frac{9}{16}$  in.**

6b.  $120 \div 15\frac{3}{4} = \frac{120}{1} \div \frac{63}{4} = \frac{120}{1} \cdot \frac{4}{63} = \frac{40}{1} \cdot \frac{4}{21} = \frac{160}{21} = 7\frac{13}{21}$ . **You get 7 complete pieces.**

6c.  $25\frac{5}{8} + 46\frac{3}{4} = 25\frac{5}{8} + 46\frac{6}{8} = 71\frac{11}{8} = 72\frac{3}{8}$ . **ABC Gum stock was  $72\frac{3}{8}$  before the drop.**

7a. **264**      b. **-17**      c. **13**      d. **-13**      e. **38**      f. **-480**

8a. **9**      b. **37**      c.  $81 \div (4 - 1)^3 + 6 = 81 \div (3)^3 + 3 = 81 \div 27 + 3 = 3 + 3 = 6$

8d. **-6**      e.  $-54 - \frac{46}{17+39} = -54 - 1 = -55$       f.  $(24) \div 8 + -28 = 3 + -28 = -25$



10a. True      10b. False      10c. False      10d. False

11a. Distributive Property      11b. Associative Property      11c. Multiplicative Inverse

11d. Commutative Property      11e. Additive Inverse

12.  $859 - 100 + 2(25) + 5[12.95 + 0.06(12.95)] = 859 - 100 + 50 + 5[12.95 + 0.78] =$   
 $859 - 100 + 50 + 5[13.73] = 859 - 100 + 50 + 68.65 = \$877.65$