

TEST NAME: **Williams Montessori 7th math number system part 1 (COPY)**  
TEST ID: **2640588**  
GRADE: **07 - Seventh Grade**  
SUBJECT: **Mathematics**  
TEST CATEGORY: **School Assessment**

Student: \_\_\_\_\_  
Class: \_\_\_\_\_  
Date: \_\_\_\_\_

1. **Which situation can be modeled by the expression  $60 + (-40) + 80$ ?**
  - A. Mae ran a distance of 60 meters north from a starting point, turned around and ran 40 meters south, and then turned around again and ran 80 meters north to a stopping point. The expression represents her distance from the starting point, in meters.
  - B. The temperature at noon in Veronica's city was  $60^{\circ}\text{F}$ . By 8 p.m., the temperature had dropped to  $40^{\circ}\text{F}$ . By noon the next day, it had increased to  $80^{\circ}\text{F}$ . The expression represents the total temperature change over a 24-hour period.
  - C. Jennifer opened a new savings account on Thursday with a deposit of \$60. She made a deposit of \$40 on Friday and a withdrawal of \$80 on Saturday. The expression represents her new account balance.
  - D. Karla processed 60 boxes for shipping on Monday, 40 on Tuesday, and 80 on Wednesday. The expression represents the total number of boxes she processed on these three days.
  
2. **The Earth's atmosphere consists of distinct layers. The troposphere is the layer closest to Earth's surface. The stratosphere begins just above the troposphere and extends up to 50 kilometers above Earth's surface. The temperature increases from  $-51^{\circ}\text{C}$  at the bottom of the stratosphere to  $-15^{\circ}\text{C}$  at the top of the stratosphere. What is the temperature increase, in degrees Celsius, from the bottom to the top of the stratosphere?**
  
3. **Wendy received a bill for \$25 from a magazine club. She paid the magazine club \$25. This can be expressed by the following equation.**

$$25 + (-25) = 0$$

**Which mathematical property justifies that the balance in her account is \$0?**

- A. additive inverse
  - B. distributive property
  - C. multiplicative inverse
  - D. additive property of zero
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4. **Earth's atmosphere consists of distinct layers. The troposphere starts at Earth's surface and extends upward 6 to 20 kilometers. In this layer the temperature decreases with increasing altitude from approximately  $17^{\circ}\text{C}$  at Earth's surface to  $-51^{\circ}\text{C}$  at the boundary with the next layer. By how many degrees Celsius does the temperature change in the troposphere?**

5. A hiker is at an elevation of 238 feet above sea level. He climbs downward until his elevation has decreased by 144 ft. Which expression can be used to determine his current elevation above sea level?
- A.  $238 + (-144)$
  - B.  $238 - (-144)$
  - C.  $(-238) + 144$
  - D.  $(-238) - 144$
6. A wedding cake was cut into 50 equal pieces.
- Write a rational expression in the form  $\frac{a}{b}$  for the amount of cake remaining after 35 pieces are served.
- The wedding caterer plans on 1 pound of meat for every 4 people at the wedding reception.
- Write a rational expression in the form  $a$  to  $b$  to describe the ratio of the amount of meat planned to the number of people.
  - Explain why the numbers in your answers above represent rational numbers.
  - Write the definition of a rational number and give three examples of rational numbers different from those already used.
7. When a rational number is written as a fraction, which statement is always true about the numerator and the denominator of the fraction?
- A. They are both integers.
  - B. They are both prime numbers.
  - C. They are both natural numbers.
  - D. They are both composite numbers.
8. Which statement BEST describes the zero property of multiplication?
- A. Switching the order of two numbers when multiplying does not change the result.
  - B. The way numbers are grouped when multiplying does not change the result.
  - C. Multiplying any number by zero results in zero.
  - D. Adding zero to a number leaves it unchanged.

9. Which expression is equivalent to  $102(-17)$ ?

- A.  $100(-17) + 2(-17)$
- B.  $100(-17) - 2(-17)$
- C.  $100(-10) + 2(-7)$
- D.  $100(-10) - 2(-7)$

10. What is the product of 32 and  $-4$ ?

- A. 128
- B. 28
- C.  $-8$
- D.  $-128$

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12. A teacher had 85 red grapes and 19 students. If each student received the same number of grapes, how many grapes were left over?

- A. 3
- B. 4
- C. 6
- D. 9

13.  $16 + (-4) =$

- A.  $-20$
- B.  $-12$
- C. 12
- D. 20

14. Use the distributive property to simplify this expression:

$$-10(1+9x)$$

15. Simplify this expression

$$-4+7(1-3m)$$

16. Simplify the expression

$$-9(6m-3)+6(1+4m)$$