Jakarta International School

7th Grade

Practice Test - Green

Algebraic Expressions and Integers

Name: _____

Date: _____

Score: $\overline{55}$

Clearly show required work. Check Carefully!

1. Write a variable expression for each word phrase. **(3)**

a) the number of eggs in *m* dozen

b) Paul has a mass of 43 kg. Which expression gives Paul's mass after he has gained *x* kilograms?

c) nine less than the quotient of four and *p*

2. Simplify these expressions. Show all steps for full credit: **(6)**

a) $\dfrac{4+18\div 2}{17-2(2)}$

b) $50 - 5 \bullet 7 + 8$

c) $5 + [2 \bullet (45 \div 9) - 3]$

3. Your friend said that the value of the expression $27 - 3\bullet4 + 5 = 101$. Explain your friend's error. What is the actual value? **(2)**

4. A shopkeeper sold nine games for $3 each and four books for $18 each. Which expression gives the sales total? **Explain your choice.** (2)

    A. $(9 + 3) \bullet (4 + 18)$
    B. $9 \bullet 3 + 4 \bullet 18$
    C. $(9 \bullet 3)(4 \bullet 18)$
    D. $9 \bullet (3 + 18)$

5. Evaluate when a = 6, b = –8 and c = 3:   **(6pts)**

a) $\dfrac{3a - 4b + 2c}{b \div (-2)}$
            b) $ac - (a + c)$
                c) $\left| b - c \right|$

6. Evaluate each expression when   x= –5,   y= 2,   z= –3   **(6pts)**

a) $\dfrac{-6xy}{yz}$
            b) $-(2x) - y + z$
             c) $-\left| x - y - z \right|$

7. A helicopter is flying 80 metres above ground level. It rises 30m, falls 45m, rises 20m, falls 10m, rises15m, and then falls 12m. How far above or below it's <u>original position</u> is it now?(1)

8. Your friend evaluates $-3 \bullet -4p$ for p $=-5$ and got 60. Explain your friend's error.(2)

9. A tree grows 5 cm each year. (2)
a) Write an expression for the tree's height after x years.

b) When the tree is 36 years old, how tall will it be?

10. a) Order the integers from least to greatest. (1)

$- |- 9 |, 0 , 9 , |2 |, - 3 , |- 5 |$

b) Which of the numbers above have the same absolute value? (1)

11. Circle the statement that is not true?(1)

A. 0 is greater than -75
B. -93 is greater than -90.
C. |-12| = 12
D. The opposite of -18 is 18.

12. Use numerals and absolute value symbols to represent each phrase. Then simplify. (2)

a) the opposite of the absolute value of negative 5.

b) the absolute value of the opposite of 33.

13. Compare. Use $<$,$>$ or $=$ to complete each statement. (3)

a) -8 ◯ $-|-9|$ b) -2 ◯ -10 c) $\dfrac{28-7}{15 \div 5}$◯ $30-9$

14. Complete each sentence with a word or words that make it true.(3)

a) A _____ is a letter that stands for a number.

b) _____ are whole numbers and their opposites.

c) A number's distance from zero on the number line is called its
_____.

15. List the integers that can replace q to make the following statement true: **(2)**

$-3 < |q| < 4$

16. Insert grouping symbols to make the number sentence true: **(1)**
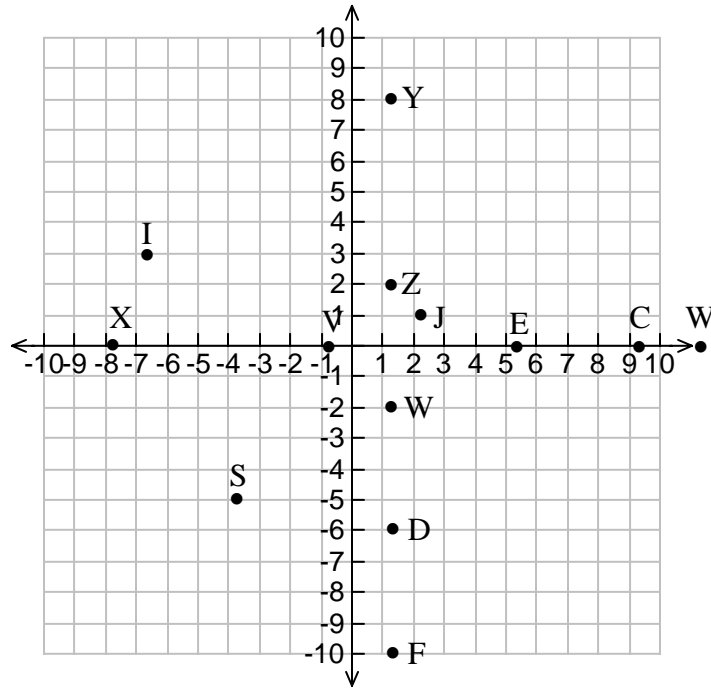
$$3 + 2 \cdot 9 - 5 = 11$$

17. Given that c and d are positive integers and f and g are negative integers, will the quotient be positive, negative or could it be either? **(1)**

$$\frac{c + d}{f + g}$$

18. ABCD is a square. Find the coordinates of D. **(2)**

A(-3,5) B(2,5), C(2,0), D(___,___)

19. Use the coordinate plane below to answer questions a - e.

a) Label the axes. (1)

b) Identify the coordinates of the <u>origin</u>. (1)

c) Graph and label the following points on the coordinate plane: (2)
   - M(2, 5)
   - A(-6, 8)
   - T(-3, 10)
   - H(4, -7)

d) Write the coordinates of the following points: (2)

C - _____   F - _____

I- _____   Y - _____

20. Point (a,b) is in quadrant II. The value of a must be _____.   The value of b must
be _____.(2)