Jakarta International School

7th Grade

Practice Test - Green

Algebraic Expressions and Integers

Name: Master

Date: _____

Score: 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

$12m$

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

$43+x$

c) nine less than the quotient of four and p

$4 \div p - 9$

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

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

$\dfrac{4+9}{17-4}$

$\dfrac{13}{13}$

$\boxed{1}$

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

$50-35+8$

$15+8$

$\boxed{23}$

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

$5+(2\cdot 5-3)$

$5+(10-3)$

$5+7$

$\boxed{12}$

3. Your friend said that the value of the expression $27-3\cdot 4+5=101$. Explain your friend's error. What is the actual value? **(2)**

Actual Value

$27-3\cdot 4+5$

$27-12+5$

$15+5$

$\boxed{20}$

Your friend did not follow order of operations. She just performed the operations in the order they appeared in the question.

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)~~ • (4 + 18)
B. 9 • 3 + 4 • 18
C. (9 • 3)(4 • 18)
D. 9 • (3 + 18)

Nine games @ $3 each is 9•3
Four books @ $18 each is 4•18
The total sales would be the sum of these products.
9•3 + 4•18. Order of ops indicates multiplication first.

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

a) $\frac{3a-4b+2c}{b\div(-2)}$ → $\frac{3\cdot6-4\cdot-8+2\cdot3}{-8\div-2}$ → $\frac{18+32+6}{4}=\boxed{14}$ or $\frac{18-(-32)+6}{4}$

b) $ac-(a+c)$ → $6\cdot3-(6+3)$ → $18-9$ → $\boxed{9}$

c) $|b-c|$ → $|-8-3|$ → $|-8+-3|$ → $|-11|$ → $\boxed{11}$

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

a) $\frac{-6xy}{yz}$ → $\frac{-6\cdot(-5)\cdot(2)}{2\cdot(-3)}$ → $\frac{30\cdot2}{-6}=\frac{60}{-6}=\boxed{-10}$

b) $-(2x)-y+z$ → $-(2\cdot-5)-2+-3$ → $-(-10)-2+-3$ → $10-2+-3$ → $8+-3$ → $\boxed{5}$

c) $-|x-y-z|$ → $-|-5-2-(-3)|$ → $-|-5+-2+3|$ → $-|-4|$ → $-\boxed{4}$

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 original position is it now?(1)

*The helicopter is 2m below its original position. (78 m above the ground).

$30-45+20-10+15-12$
$30+-45+20+-10+15+-12$
$-15+20+-10+15+-12$
$5+-10+15+-12$
$-5+15+-12$
$10+-12$ → $\boxed{-2}$

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

$-3\cdot-4(-5)$
$12\cdot(-5)$
-60

Your friend didn't use the rules for multiplying integers. − x − = +, then + x − = (−) so the product should be −60.

9. A tree grows 5 cm each year. (2)

a) Write an expression for the tree's height after x years.

$5x$

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

$5 \cdot 36$
180 The tree will be 180 cm after 36 years.

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

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

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

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

$-|-9|$ and 9 or -9 and 9.

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.

$-|-5| = -5$

b) the absolute value of the opposite of 33.

$|-33| = 33$

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

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

$\frac{21}{3} = 7$ 21

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

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

b) Integers are whole numbers and their opposites.

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

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

$-3<|q|<4$

-3, -2, -1, 0, 1, 2, 3

16. Insert grouping symbols to make the number sentence true: (1)

$3 + 2 \cdot 9 - 5 = 11$

$3+2 \cdot (4)$

$3+8$

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)

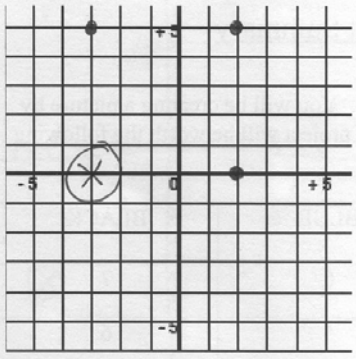
$\frac{c+d}{f+g}$ = $\frac{\text{positive \#}}{\text{negative \#}}$ positive ÷ negative = negative

The quotient will be negative.

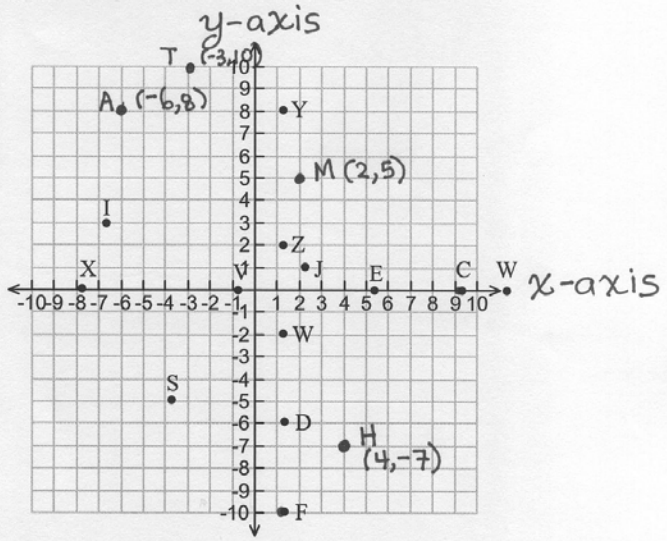
18. ABCD is a square. Find the coordinates of D. (2)

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

D=(-3,0)



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



a) Label the axes. (1) (See coordinate plane)

b) Identify the coordinates of the origin. (1) (0,0)

c) Graph and label the following points on the coordinate plane: (2)

- M(2, 5)
- A(-6, 8)
- T(-3, 10)
- H(4, -7)

See above.

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

C - (9,0) F - (1,-10)

I- (-7,3) Y - (1,8)

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