Jakarta International School
6th Grade

Name: _____

Date: _____

Formative Assessment - Black
Number Sense and Algebraic Thinking

Score: $\dfrac{\quad}{56}$

Order of Operations

1) Simplify these expressions. (4pts each)

a. $4^3 + (36 - 28) \times 12 + (-3)$

b. $\dfrac{\sqrt{49} + (16 - 25)^2 \times (15 - 18)^3}{5^2}$

c. $\dfrac{2}{7} \times 2800 - \left\{(1.3)^2 + (1.3)^2\right\}$

d. $\dfrac{47.8 + 13.6 - 15.5}{0.02^3}$

Evaluating Algebraic Expressions.

2) Evaluate the expressions. (3pts each)

a. $3k(2k+1)$ if $k=(-4)$

b. $A = \dfrac{(a+b)}{2} \times h$ if, a=7, b=16 and h=5

c. $\dfrac{4r^2 - t}{2t^3}$ if r =3 and t =4

Algebraic equations.

3) Solve the following equations. Show all steps including the check step (3pts each)

a. $4(3x + 5) = 2x$

b. $5x - 2 = \dfrac{1}{2}$

c. $15x + 6 = 6x - 12$

Area and perimeter

4) Write an equation and solve to find x then calculate the area and perimeter of the rectangle.

$2x + 1$ $x + 5$

Use the 4-step plan to solve the following problems. Please use the extra paper provided. (5pts each)

5) A pair of scales had some marbles on each pan. The marbles are all the same weight.
   To start with there are five times as many marbles on one side.
   When 28 marbles are transferred from one side to the other, the scales balance perfectly.
How many marbles were there on each side to start with?

6) A man is twice as old as his son. Nine years ago the sum of their ages was 66 years.
How old are they both now?

7) The lengths (in cm) of the sides of a quadrilateral are consecutive odd numbers. The quadrilateral has a perimeter of 72 cm. What is the length of the longest side?

8) Suppose there are 25 years between generations. Every person has 2 parents, 4 grandparents, 8 great grandparents, and so on.
How many people will have contributed to the gene pool in the 500 years before you were born?