Jakarta International School
6th Grade

Formative Assessment - Blue
Number Sense and Algebraic Thinking

Name: _____

Date: _____

Score: $\dfrac{\quad}{58}$

Order of Operations

1) Simplify these expressions: (4pts each)

a. $\dfrac{41+15}{2^3} \bullet 4 + 2^2$

b. $\dfrac{3^3 - \left(16 - 11\right)}{3 - \left(-8\right)}$

c. $50 - \left\{ 3 \times \left(15 - 5\right)\right\} \div 2 + 4$

d. $\dfrac{2\left[3(13 - 2)\right] - 6}{(9 - 7)(14 \div 2) - 3} \div \dfrac{30}{2}$

Evaluating Algebraic Expressions.

2) Evaluate the following expressions by substituting the values below. (3pts each)

$a=12, b=10, c=25$

a. $b^2 + 3c - \dfrac{84}{a}$

b. $2(2c - a) + (a - b)^3$

c. $\dfrac{4b + a}{c + 1}$

Algebraic equations.

3) Use mental math to solve the following equations (1pt) **and** show how you checked (1pt) your answer.

a. $\dfrac{m}{8} = 13$

b. $4p^2 = 36$

c. $9d + 4 = 40$

d. $6q = 150$

<u>Problem Solving</u> (3pts each)

4) The Smiths have 3 children. The product of their ages is 200, and the two youngest are twins. What is the age of their oldest child?

5) Mr. and Mrs. Strydhorst–Piers are paving their patio with bricks measuring 1meter by 1meter. They need to lay 16 bricks in a rectangular shape with the **least** possible perimeter.
What will the length and width of the rectangular patio measure?

6) A group of 20 members and 5 nonmembers visited a museum. The admission cost was $6 for members and $10 for nonmembers. The group decided to divide the total cost evenly between all 25 people.
How much did each person pay?

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

7) Robert and his sister share cell phone service. They divide the bill equally, including the monthly fee of $39 plus $0.30 for each additional minute beyond their free minutes.
One month you are charged for 125 additional minutes. Find Robert's share of the bill.

8) At the end of the day, you have $19 in your wallet. You remember spending $14 on dinner, collecting $23 a friend owed you, and spending $11 on a T-Shirt.
How much money did you have at the beginning of the day?

9) A restaurant has 12 square tables that seat one person on each side. For a private party, the tables are joined together in a row to form one long table. How many people can be seated at the party dinner?

10) You borrow a book from the library to read during the school holiday. On the first day of the holidays, you read one quarter of the book. On the second day you read half of the remaining pages. On the third day you finish the last 120 pages of the book. How many pages does the book have?