



Jakarta International  
School  
7<sup>th</sup> Grade

**Practice Test - Blue**

Solving Multi-Step Equations

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score:  $\overline{55}$

Clearly show required work. Check Carefully! Make sure you follow the directions to earn full credit!!!

**Part 1. Solving Equations**

Solve each equation. Show your work and check your solutions. (3 points per problem)

1. Solve for d:  $\frac{3}{2} = \frac{15}{c} = \frac{(c-d)}{4}$

2. Solve for g:  $5|g| - (4 - 3|g|) = 20$

3. Solve for v:  $19 - 3(v - 5) = 4v + 2(7 - v)$

4. Solve for x:  $\frac{2}{x} - 4 = \frac{3}{x}$

5. Solve the formula for the indicated variable:  $a = \frac{v-u}{t}; u$

**Part 2. Problem Solving**

For each problem, complete the 4 step problem solving process. (4 points per problem)

1. Define a variable
2. Write an equation
3. Find the solution and write your answer in a meaningful way
4. Check your solution

6. Jolene has taken 2 tests so far this semester. She has earned the following percents: 74 and 96. What must Jolene earn on her 3rd test so that her average is an A?

7. (In this problem, Skip Step 1: 3 points only) Two side of an isosceles triangle have measures of  $x+10$  and  $x+40$ , and the perimeter of the triangle is 420 units. Find the sum of the two possible values of  $x$ .

8. I decrease a certain number by two fifths of itself, and it becomes one more than half its original value. What is the number?
9. **TEMPERATURE** The temperature in Scorpion Gulch is  $38^{\circ}\text{C}$  and is dropping at the rate of 1.7 degrees per hour. The temperature at Conn Junction is  $25^{\circ}\text{C}$  and is going up at 2.1 degrees per hour. After how long is the temperature the same in each place? (you may round your answer)
10. **FROST** The townspeople of Leddiston, OH, construct a 250-pound snow sculpture. It starts to melt at a rate of 3 pounds per day.
- a) How long will it be before the sculpture weighs 160 pounds?
- b) What assumption do you have to make in order for your answer in part (a) to be meaningful? (1 point)
11. **TUNNEL** Ornerly and sly company has a contract to dig a tunnel through Bald Mountain. Crew A starts at the west end and digs at 9 meters per day.

*Complete the 4 step problem solving process for both Parts a and b.  
(4 points per part)*

- a. Crew B starts at the east end two days after Crew A and digs at 12 meters per day. After how many days will both crews have dug the same number of meters?
- b. The total length of the tunnel is to be 1992 meters. How many days does it take to dig the tunnel from the time Crew A starts?
12. The sum of the first and third of three consecutive odd integers is 131 less than three times the second integer. Find the three integers.
13. A train that is  $2\frac{1}{2}$  kilometers long takes 10 minutes to go completely through a tunnel that is  $1\frac{1}{2}$  km long. How fast was the train moving? (please give your answer in km/hr)
14. A swimming pool has 3 drains. One can drain the pool in 5 h, one can drain it in 8 h, and one can drain it in 10 h. How long would it take to drain the pool if all three were open at once?