**Grade 7 Unit 1: Patterns & Relations – PacticeTest**

1. **SIMPLIFY (combine the like terms): (Colors may help)**
   1. 8x+7-6+5a-4x-7a
   2. 3x+ 5 − 2x +7
   3. 4a – 3 + 6a + 14a
   4. 6m + 8 − 4m − 2 + 5m
   5. 10p + 3q − 5p − 2q + 6
   6. 9k – 3 + 7 − 4k + 2k
2. **Write an algebraic expression for each the following. (Let “n” represent a number)**
3. Triple a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. The product of 4 and a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Double a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. A number multiplied by 4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. The quotient of a number and 6\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. A number divided by 11 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. 20 divided by a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Evaluate (Show all work)**
   1. 7f f= 6
   2. 6c c = 5
   3. n = 7
   4. x = 80

1. **Solve for the variable:** 
   1. 10x = 90
   2. = 8
   3. = 12
2. **Translate the following word problems into algebraic expressions:**
   1. John is tracking the height of a plant he's growing. The plant grows 2 inches per week. Write an algebraic expression to represent the height of the plant after 'w' weeks.
   2. Mary is paid $12 per hour for her part-time job. If she works 'h' hours in a week, write an algebraic expression to represent her weekly earnings.
   3. Miss Buggie is getting candy for her students. She is putting 5 pieces of candy in each bag. Each class has a different number of students. Write an algebraic expression to represent the number of bags of candy 'c' for each class.
   4. Sophia runs a small coffee shop in town and needs to order new cups for her business. She decides to split the cost of the cups equally among her 5 monthly budgets. If the total cost of the cups is CCC dollars, write an algebraic expression to represent how much Sophia will allocate from her budget each month for the cups.