GRADE 6 MATHEMATICS

Algebraic Expressions

Name: Date:

INQUIRY

A Nanjing metro ticket costs ¥2 base + ¥1 per station. How would you write this as a rule using algebra?

Discuss with your partner. Write your initial ideas below:

Key Vocabulary

Term	Definition
Variable	A letter representing an unknown (x, n, a).
Coefficient	Number in front of a variable. In 3x, it's 3.
Constant	A number on its own. In 3x + 5, it's 5.
Like terms	Terms with the same variable and power (3x and 5x).

Part A — Identifying Parts

1. For the expression 4x + 7y – 3, identify: (a) the variables (b) the coefficients (c) the constant (d) the number of terms. [4 marks]

2. Which of these are expressions and which are equations? (a) 3x + 5 (b) 2y = 10 (c) n^2 – 4n + 1 (d) 7m + 3 = 24 [2 marks]

Part B — Simplifying

3. Simplify: 3a + 5a – 2a [1 marks]

Show your working:

4. Simplify: 7x + 3y – 2x + 5y [2 marks]

Show your working:

5. Simplify: 4m + 8 – 2m + 3 [2 marks]

Show your working:

6. Simplify: 6p – 3q + 2p + q – 4 [2 marks]

Show your working:

7. Simplify: 5ab + 3a – 2ab + a [2 marks]

Show your working:

Part C — Writing Expressions from Words

8. Write an algebraic expression for each: (a) 5 more than a number n. (b) A number x multiplied by 4 then subtract 3. (c) Nanjing metro: ¥2 base + ¥1 per station for n stations. (d) Seoul subway: 1,250 won base + 100 won per km for d km. (e) German bakery: 3 euro per bread and 0.50 euro per roll for b breads and r rolls. [5 marks]

9. A student says '5 more than double a number' is written as 5 + 2 = 7. Explain their mistake and write the correct expression. [2 marks]