Lesson 6-5 · Session 1

Writing Algebraic Expressions

Name _____ Date _____ Period _____

Maryland Standard 6.AT.6a · Learning target — I can write an algebraic expression that uses a variable for an unknown amount.

Show a model, calculation, or explanation. Answer every part and label units when needed.

Exercises 1–12 earn 1 point for a correct response and 1 for supporting work. Spiral Review and Test Practice earn 1 point each.

Learn from a model

REMEMBER

- An algebraic expression uses a variable (letter) to represent an unknown number.
- Translate phrases like ‘a number increased by 5’ as n + 5.
- Watch out — 5x means 5 times x; a number written next to a variable always means multiply.
- Check it — read your expression aloud and compare it with the situation word by word.

WORKED EXAMPLE

Writing an Expression with a Variable A club buys a $14 shirt for each member and pays one $35 setup fee. Write an expression for the total cost.

Step 1 Name the unknown. Let m = the number of members.

Step 2 Write the part that changes. $14 for each member 14m

Step 3 Write the part that stays the same. one-time fee 35

Step 4 Join them with the operation the story needs. 14m + 35

Answer The expression is 14m + 35, where m stands for the number of members.

Practice

1. Write an algebraic expression for: ‘a number x decreased by 7.’ _____

Answer _____

SHOW YOUR THINKING

2. Write an algebraic expression for: ‘4 times a number n, plus 9.’ _____

Answer _____

SHOW YOUR THINKING

3. Write an algebraic expression for: 'the quotient of a number y and 6.'

Answer _____

SHOW YOUR THINKING

4. Write an algebraic expression for each phrase.

a. a number b increased by 15 _____
b. 9 times a number m _____
c. 6 less than a number t _____
d. the quotient of a number p and 5 _____
e. 2 times a number h, minus 8 _____

Answer _____

SHOW YOUR THINKING

5. Pool Pass. A pool charges $6 for each visit plus a one-time $18 pass fee. Let v stand for the number of visits. Write an expression for the total cost.

Answer _____

SHOW YOUR THINKING

6. Book Club. A book club mails 5 books to each member and 20 extra books to the school library. Let m stand for the number of members. Write an expression for the books mailed.

Answer _____

SHOW YOUR THINKING

7. Saving Money. Yusuf has $75 saved and spends $8 each week. Let w stand for the number of weeks. Write an expression for the money he has left, then name the coefficient and the constant.

Answer _____

RECORD YOUR RESPONSE

8. Write a situation that matches the expression 20n + 35. Say what n stands for and what each number means in your story.

Answer _____

SHOW YOUR THINKING

9. A ticket costs $11 and parking costs $6 once. Write an expression for the total cost of t tickets.

Answer _____ the expression

SHOW YOUR THINKING

10. Write an expression for “9 less than twice a number n.”

Answer _____ the expression

SHOW YOUR THINKING

11. Two Expressions. A jar holds 50 marbles. Write an expression for the marbles left after m are removed, and an expression for the marbles removed in r rounds of 5.

Answer _____ both expressions

SHOW YOUR THINKING

12. Find the Mistake. For “6 less than a number y,” Ivan wrote 6 − y. Explain the mistake.

Answer _____ the mistake and the expression

EXPLAIN WITH MATHEMATICAL EVIDENCE

Spiral review

13. From Lesson 6-4 Session 2. Find the value of (4 + 6) × 2.

Answer _____

SHOW YOUR THINKING

14. From Lesson 6-2 Session 1. Find 6/7 ÷ 3/7.

Answer _____

SHOW YOUR THINKING

15. From Lesson 4-4 Session 1. Find 90% of 300.

Answer _____

SHOW YOUR THINKING

Test practice

16. "3 times a number k, plus 8" is written —

□ A. 3(k + 8)	□ B. 3 + 8k
□ C. 8k − 3	□ D. 3k + 8

17. In 9w − 2, the coefficient of w is —

□ A. 9	□ B. 2
□ C. w	□ D. −2

18. A letter standing for an unknown amount is a —

□ A. constant	□ B. variable
□ C. product	□ D. sum

Check and revise

CHECK YOUR MATHEMATICS	HOW DID IT GO?
Keep subtraction and division in the correct order. Every part answered / Work shown / Units labeled when needed	I can do this: Independently / With a hint / With help Question to revisit: _____

One correction or question I want to discuss: _____

Check one result with a model, an inverse operation, or substitution. Explain why the values agree.
Sentence Frame: "I know this because..."