MSTAR PRACTICE WORKSHEET

Lesson 6-6: Identify Equivalent Algebraic Expressions

Grade 6 Mathematics · Standard 6.AT.7

Name: _____ Date: _____

These are MSTAR-style questions written for this curriculum to rehearse the format. They are not official Maryland assessment items. MSTAR — Maryland's new state test, first given in spring 2027 — uses the same kinds of questions you see here: selected response, select-all, two-part evidence questions, and written responses.

Part A — Skills Check

Warm up with the lesson's core skills — one best answer each.

Question 1 SELECTED RESPONSE · 1 POINT

Which expression is equivalent to 4x + 3x?

(A) 7x

(B) $7x^2$

(C) 12x

(D) 43x

Question 2 SELECTED RESPONSE · 1 POINT

Which expression is equivalent to 2(m + 5)?

(A) 2m + 10

(B) 2m + 5

(C) 7m

(D) m + 10

Question 3 SELECTED RESPONSE · 1 POINT

Which property is shown: 3(x + 7) = 3x + 21?

(A) Commutative

(B) Distributive

(C) Associative

(D) Identity

Question 4 SELECTED RESPONSE · 1 POINT

Simplify: 5n + 2n

(A) 7n

(B) $7n^2$

(C) 10n

(D) 52n

Question 5 SELECTED RESPONSE · 1 POINT

Producer A wrote 2(x + 3) for a beat's cost. Which expression is equivalent?

(A) 2x + 6

(B) 2x + 3

(C) 2x + 5

(D) x + 6

Question 6 SELECTED RESPONSE · 1 POINT

A track stacks 3x and then one more x. Which expression is equivalent to 3x + x?

(A) $3x^2$

(B) 3x

(C) 4x

(D) 4

Part B — Test-Format Questions

These match the state test's formats: two-part questions, select-all, and written responses.

Question 7 TWO-PART QUESTION

Part A

Which expression is equivalent to 4(x + 3)?

Fill in the bubble next to the one best answer.

(A) 4x + 12

(B) 4x + 3

(C) 7x

(D) x + 12

Part B

Answer Part A before Part B — Part B asks about your reasoning.

Which reasoning shows why your answer to Part A is correct?

(A) Multiply 4 by each term inside the parentheses: 4 · x + 4 · 3 = 4x + 12. Testing x = 2 gives 4(2 + 3) = 20 and 4(2) + 12 = 20, so the two expressions match.

(B) Multiply only the first term inside the parentheses and copy the second term: 4x + 3.

(C) Add 4 and 3 because both are numbers, then attach the variable: 7x.

(D) Multiply only the second term inside the parentheses and copy the first term: x + 12.

Question 8 WRITTEN RESPONSE · 2 POINTS

Type II Reasoning: Testing Only One Value

> Priya claimed that 2x + x and 2x² are equivalent expressions. Her only check was x = 0. She wrote: 2(0) + 0 = 0 and 2(0)² = 0. Because both results were 0, she said the expressions are equivalent.

Explain Priya's misconception and give the correct simplified form of 2x + x.

Write your answer in complete sentences. Show or explain your mathematical thinking.

Part C — Show Your Thinking

Answer in writing, the way the state test's constructed responses work.

Question 9 WRITTEN RESPONSE · 2 POINTS

A student says 2x + 3 and 5x are equivalent because both equal 5 when x = 1. Is the student correct? Explain why testing one value is not enough to prove equivalence, and find a value of x where they give different results.

Write your answer in complete sentences. Show or explain your mathematical thinking.

When you finish, check your reasoning with your teacher or family. Your teacher has the scoring guide for the written responses.