

2026 MCAS Sample Student Work and Scoring Guide

Grade 3 Mathematics

Question 15: Constructed-Response

Reporting Category: Operations and Algebraic Thinking

Standard: [3.OA.B.5](#) – Apply properties of operations to multiply.

Item Description: Use properties of multiplication to determine an unknown value in an expression, write an equivalent expression, and explain whether given expressions are equivalent.

Calculator: Not allowed

This item can be found in the released item sets on the [MCAS Resource Center](#).

Scoring Guide

Select a score point in the table below to view the sample student response.

Score*	Description
3A 3B	The student response demonstrates an exemplary understanding of the Operations and Algebraic Thinking concepts involved in applying properties of operations to multiply. The student correctly uses properties of multiplication to determine an unknown value in an equation, to identify equivalent expressions, and to determine if two expressions are or are not equivalent.
2	The student response demonstrates a good understanding of the Operations and Algebraic Thinking concepts involved in applying properties of operations to multiply. Although there is significant evidence that the student was able to recognize and apply the concepts involved, some aspect of the response is flawed. As a result, the response merits 2 points.
1	The student response demonstrates a minimal understanding of the Operations and Algebraic Thinking concepts involved in applying properties of operations to multiply. While some aspects of the task are completed correctly, others are not. The mixed evidence provided by the student merits 1 point.
0	The student response contains insufficient evidence of an understanding of the Operations and Algebraic Thinking concepts involved in applying properties of operations to multiply. As a result, the response does not merit any points.

*Letters are used to distinguish between sample student responses that earned the same score (e.g., 3A and 3B).

Score Point 3A

This question has three parts.

Aisha, Brayden, and Emilio are solving multiplication problems.

Part A

Aisha writes this equation.

$$9 \times a = 9$$

What value of a makes Aisha's equation true?

Enter your answer in the box.

1

Part B

Brayden writes this expression.

$$8 \times 7$$

Write a different multiplication expression that is equivalent to Brayden's expression.
Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

I got 7×8 because $7 \times 8 = 56$ and $8 \times 7 = 56$.

Part C

Emilio writes this expression.

$$20 \times 8$$

Emilio then writes another expression.

$$(2 \times 8) + (10 \times 8)$$

Emilio says the values of his two expressions are equivalent.

Is Emilio correct? Explain how you got your answer.

Enter your answer and your explanation in the space provided.

They are not because $20 \times 8 = 160$ and $(2 \times 8) + (10 \times 8) = 96$ so they are not equivalent.

Score Point 3B

This question has three parts.

Aisha, Brayden, and Emilio are solving multiplication problems.

Part A

Aisha writes this equation.

$$9 \times a = 9$$

What value of a makes Aisha's equation true?

Enter your answer in the box.

1

Part B

Brayden writes this expression.

$$8 \times 7$$

Write a different multiplication expression that is equivalent to Brayden's expression.
Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

28 $\times$ 2 beacause i did $8 \times 7 = 56$ and then counted by 2s to get to 56 and when that was done i counted all the 2s i wrote and the number was 28 so then i did $28 + 28 = 56$.so another exxperesion could be 2×28 .

Part C

Emilio writes this expression.

$$20 \times 8$$

Emilio then writes another expression.

$$(2 \times 8) + (10 \times 8)$$

Emilio says the values of his two expressions are equivalent.

Is Emilio correct? Explain how you got your answer.

Enter your answer and your explanation in the space provided.

emilo is not correct beacuae $20 \times 8 = 160$ and $2 \times 8 = 16$ and $10 \times 8 = 80$ and $80 + 16 = 96$ not 160.

Score Point 2

This question has three parts.

Aisha, Brayden, and Emilio are solving multiplication problems.

Part A

Aisha writes this equation.

$$9 \times a = 9$$

What value of a makes Aisha's equation true?

Enter your answer in the box.

1

Part B

Brayden writes this expression.

$$8 \times 7$$

Write a different multiplication expression that is equivalent to Brayden's expression.
Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

7×8 i flipped the numbers around using comutive property.

Part C

Emilio writes this expression.

$$20 \times 8$$

Emilio then writes another expression.

$$(2 \times 8) + (10 \times 8)$$

Emilio says the values of his two expressions are equivalent.

Is Emilio correct? Explain how you got your answer.

Enter your answer and your explanation in the space provided.

i think that Emillo is incorrect because 16 and 80 arent equal

Score Point 1

This question has three parts.

Aisha, Brayden, and Emilio are solving multiplication problems.

Part A

Aisha writes this equation.

$$9 \times a = 9$$

What value of a makes Aisha's equation true?

Enter your answer in the box.

1

Part B

Brayden writes this expression.

$$8 \times 7$$

Write a different multiplication expression that is equivalent to Brayden's expression.
Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

$$8 \times 6$$

Part C

Emilio writes this expression.

$$20 \times 8$$

Emilio then writes another expression.

$$(2 \times 8) + (10 \times 8)$$

Emilio says the values of his two expressions are equivalent.

Is Emilio correct? Explain how you got your answer.

Enter your answer and your explanation in the space provided.

no because if you add you would get 98

Score Point 0

This question has three parts.

Aisha, Brayden, and Emilio are solving multiplication problems.

Part A

Aisha writes this equation.

$$9 \times a = 9$$

What value of a makes Aisha's equation true?

Enter your answer in the box.

9

Part B

Brayden writes this expression.

$$8 \times 7$$

Write a different multiplication expression that is equivalent to Brayden's expression.
Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

$$8 \times 7 = 57$$

Part C

Emilio writes this expression.

$$20 \times 8$$

Emilio then writes another expression.

$$(2 \times 8) + (10 \times 8)$$

Emilio says the values of his two expressions are equivalent.

Is Emilio correct? Explain how you got your answer.

Enter your answer and your explanation in the space provided.

you can do $8 \times 10 = 80$ and you can do
 $10 \times 8 = 80$.