

2026 MCAS Sample Student Work and Scoring Guide

Grade 7 Mathematics

Question 13: Constructed-Response

Reporting Category: Ratios and Proportional Relationships

Standard: [7.RP.A.2](#) - Recognize and represent proportional relationships between quantities.

Item Description: Determine unit rates associated with ratios of fractions and use them to write an equation and solve real-world problems.

Calculator: 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
4A 4B	The student response demonstrates an exemplary understanding of the Ratios and Proportional Relationships concepts involved in recognizing and representing proportional relationships between quantities. The student correctly determines which equation can represent a proportional relationship and uses it to solve a real-world problem.
3	The student response demonstrates a good understanding of the Ratios and Proportional Relationships concepts involved in recognizing and representing proportional relationships between quantities. 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 3 points.
2	The student response demonstrates a fair understanding of the Ratios and Proportional Relationships concepts involved in recognizing and representing proportional relationships between quantities. While some aspects of the task are completed correctly, others are not. The mixed evidence provided by the student merits 2 points.
1	The student response demonstrates a minimal understanding of the Ratios and Proportional Relationships concepts involved in recognizing and representing proportional relationships between quantities.
0	The student response contains insufficient evidence of an understanding of the Ratios and Proportional Relationships concepts involved in recognizing and representing proportional relationships between quantities. 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., 4A and 4B).

Question Introduction

This question has four parts.

A chef uses a recipe that requires $\frac{2}{3}$ cup of rice to make 4 servings of soup.

Score Point 4A

Part A

The chef will make 12 servings of soup for a small dinner party.

Based on the recipe, how many cups of rice does the chef need to make 12 servings of soup? Show or explain how you got your answer.

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

12/4=3
3*(2/3)=2 cups of rice

Part B

Which of the following equations can be used to find c , the number of cups of rice the chef needs to make x servings of soup?

(A) $c = 6x$

(B) $c = \frac{1}{6}x$

(C) $x = \frac{1}{6}c$

(D) $cx = 6$

Part C

Based on the recipe, how many servings of soup can the chef make with 16 cups of rice? Show or explain how you got your answer.

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

2 cups to 12 servings
16/2=8
8*12=96 servings

Part D

The chef needs to buy some bags of rice in order to make 48 servings of soup for a large dinner party.

- Each bag contains 4 cups of rice.
- Each bag of rice costs \$3.50.

Based on the recipe, what is the cost, in dollars, of the bags of rice the chef needs to buy to make 48 servings of soup? Show or explain how you got your answer.

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

16 cups to 96 servings
96/48=2
16/2=8
8 cups to 48 servings
8/4=2
2*3.50=7
\$7 for the bags

Score Point 4B

Part A

The chef will make 12 servings of soup for a small dinner party.

Based on the recipe, how many cups of rice does the chef need to make 12 servings of soup? Show or explain how you got your answer.

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

$4 \times 3 = 12$
 $2/3 \times 3 = 6/3 = 2$
 2 cups of rice.

Part B

Which of the following equations can be used to find c , the number of cups of rice the chef needs to make x servings of soup?

(A) $c = 6x$

(B) $c = \frac{1}{6}x$

(C) $x = \frac{1}{6}c$

(D) $cx = 6$

Part C

Based on the recipe, how many servings of soup can the chef make with 16 cups of rice? Show or explain how you got your answer.

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

$16 \div 6 = 96$ cups.

Part D

The chef needs to buy some bags of rice in order to make 48 servings of soup for a large dinner party.

- Each bag contains 4 cups of rice.
- Each bag of rice costs \$3.50.

Based on the recipe, what is the cost, in dollars, of the bags of rice the chef needs to buy to make 48 servings of soup? Show or explain how you got your answer.

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

$48 \div 6 = 8$
 $3.50 \times 2 = 7$
 \$7

Score Point 3

Part A

The chef will make 12 servings of soup for a small dinner party.

Based on the recipe, how many cups of rice does the chef need to make 12 servings of soup? Show or explain how you got your answer.

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

$2/3 \times 3/1 = 2$ cups of rice to make 12 servings of soup.

Part B

Which of the following equations can be used to find c , the number of cups of rice the chef needs to make x servings of soup?

(A) $c = 6x$

(B) $c = \frac{1}{6}x$

(C) $x = \frac{1}{6}c$

(D) $cx = 6$

Part C

Based on the recipe, how many servings of soup can the chef make with 16 cups of rice? Show or explain how you got your answer.

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

2 cups = 12 servings
 $2(8)$ cups = $12(8)$ servings
 16 cups = 96 servings

Part D

The chef needs to buy some bags of rice in order to make 48 servings of soup for a large dinner party.

- Each bag contains 4 cups of rice.
- Each bag of rice costs \$ 3.50.

Based on the recipe, what is the cost, in dollars, of the bags of rice the chef needs to buy to make 48 servings of soup? Show or explain how you got your answer.

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

$2(4)$ cups = $12(4)$ servings
 8 cups = 48 servings
 Each bag contains 4 cups of rice, MEANING the chef needs 2 bags.
 $3.50(2) = \$7.00$

Score Point 2

Part A

The chef will make 12 servings of soup for a small dinner party.

Based on the recipe, how many cups of rice does the chef need to make 12 servings of soup? Show or explain how you got your answer.

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

$$2/3 \times 3 = 2$$

Part B

Which of the following equations can be used to find c , the number of cups of rice the chef needs to make s servings of soup?

☒ A $c = 6s$

☐ B $c = \frac{1}{6}s$

☐ C $s = \frac{1}{6}c$

☐ D $cs = 6$

Part C

Based on the recipe, how many servings of soup can the chef make with 16 cups of rice? Show or explain how you got your answer.

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

$$2 \times 8 = 16 \text{ cups of rice}$$
$$12 \times 8 = 96 \text{ servings of soup}$$

Part D

The chef needs to buy some bags of rice in order to make 48 servings of soup for a large dinner party.

- Each bag contains 4 cups of rice.
- Each bag of rice costs \$3.50.

Based on the recipe, what is the cost, in dollars, of the bags of rice the chef needs to buy to make 48 servings of soup? Show or explain how you got your answer.

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

$$12 \times 4 = 48$$
$$3.50 \times 12 = \$42$$

Score Point 1

Part A

The chef will make 12 servings of soup for a small dinner party.

Based on the recipe, how many cups of rice does the chef need to make 12 servings of soup? Show or explain how you got your answer.

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

The chef needs 2 cups of rice to make 12 servings because to make 1 serving he needs $\frac{1}{6}$ cups so I multiplied $\frac{1}{6}$ by 12 and got 2

Part B

Which of the following equations can be used to find c , the number of cups of rice the chef needs to make x servings of soup?

(A) $c = 6x$

(B) $c = \frac{1}{6}x$

(C) $x = \frac{1}{6}c$

(D) $cx = 6$

Part C

Based on the recipe, how many servings of soup can the chef make with 16 cups of rice? Show or explain how you got your answer.

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

$\frac{1}{6} \times 16 = 2\frac{2}{3}$ because he needs $\frac{1}{6}$ cups to make 1 serving so I multiplied $\frac{1}{6}$ by 16 and got $2\frac{2}{3}$ cups

Part D

The chef needs to buy some bags of rice in order to make 48 servings of soup for a large dinner party.

- Each bag contains 4 cups of rice.
- Each bag of rice costs \$3.50.

Based on the recipe, what is the cost, in dollars, of the bags of rice the chef needs to buy to make 48 servings of soup? Show or explain how you got your answer.

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

$\frac{1}{6} \times 48 = 8$
 $8 \times 3.50 = 28$
 He will spend \$28 because he needs 8 bags to make 48 serving and each bag costs \$3.50

[Back to Scoring Guide](#)

Score Point 0

Part A

The chef will make 12 servings of soup for a small dinner party.

Based on the recipe, how many cups of rice does the chef need to make 12 servings of soup? Show or explain how you got your answer.

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

$$\frac{2}{3} = 0.66$$

$$0.66 \times 12 = 7.92$$

Part B

Which of the following equations can be used to find c , the number of cups of rice the chef needs to make x servings of soup?

☒ A $c = 6x$

☐ B $c = \frac{1}{6}x$

☐ C $x = \frac{1}{6}c$

☐ D $cx = 6$

Part C

Based on the recipe, how many servings of soup can the chef make with 16 cups of rice? Show or explain how you got your answer.

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

$$\frac{2}{3} = 0.66$$

$$0.66 \times 16 = 10.56$$

Part D

The chef needs to buy some bags of rice in order to make 48 servings of soup for a large dinner party.

- Each bag contains 4 cups of rice.
- Each bag of rice costs \$ 3.50.

Based on the recipe, what is the cost, in dollars, of the bags of rice the chef needs to buy to make 48 servings of soup? Show or explain how you got your answer.

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

$$0.66 \times 48 = 31.68 \text{ cups}$$

$$31.68 \div 4 = 7.92 \text{ bags}$$

$$7.92 \times 3.50 = \$27.72$$