

2025 MCAS Sample Student Work and Scoring Guide

Grade 5 Mathematics

Question 14: Constructed-Response

Reporting Category: Number and Operations—Fractions

Standard: [5.NF.B.5](#) - Interpret multiplication as scaling (resizing).

Item Description: Identify a product greater than one factor based on the size of the other factor, determine factors that will give a product that is equal to the other factor, and reason about the size of products based on the size of the factors.

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
4A	The student response demonstrates an exemplary understanding of the Number and Operations - Fractions concepts involved in interpreting multiplication as scaling. The student correctly identifies a product greater than one factor based on the size of the other factor, determines factors that will give a product that is equal to the other factor, and reasons about the size of products based on the size of the factors.
4B	
3	The student response demonstrates a good understanding of the Number and Operations - Fractions concepts involved in interpreting multiplication as scaling. 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 Number and Operations - Fractions concepts involved in interpreting multiplication as scaling. 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 Number and Operations - Fractions concepts involved in interpreting multiplication as scaling.
0	The student response contains insufficient evidence of an understanding of the Number and Operations - Fractions concepts involved in interpreting multiplication as scaling. 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).

Score Point 4A

This question has four parts.

Part A

A teacher wrote three expressions.

Which expression has a product **greater than** $\frac{5}{8}$?

Select the correct answer.

$$\frac{10}{8} \times \frac{5}{8}$$

$$\frac{8}{8} \times \frac{5}{8}$$

$$\frac{3}{8} \times \frac{5}{8}$$

Part B

Then, the teacher wrote this expression.

$$15 \times \frac{2}{3}$$

Is the product of the expression greater than, less than, or equal to $\frac{2}{3}$? Explain your reasoning.

Enter your answer and your explanation in the space provided.

It is greater than because the number 15 is bigger than the number 1 so it will have a bigger awnser wich is 10. I got 10 by doing $\frac{15}{1} \times \frac{2}{3} = \frac{30}{3} = 10$

Part C

Next, the teacher asked a student to find the products of these expressions.

$$30 \times \frac{5}{4}$$

$$30 \times \frac{3}{4}$$

Without multiplying, determine which of these expressions has a product **greater than** 30. Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

Without multiplying I know that $30 \times \frac{5}{4}$ will be bigger because $\frac{5}{4}$ is already bigger than one whole. In simplest form its $1\frac{1}{4}$ so it will be bigger than 30.

Part D

Finally, the teacher wrote this equation.

$$\frac{13}{7} \times \boxed{?} = \frac{13}{7}$$

Write **two** fractions that can replace the $\boxed{?}$ to make the equation true. Explain how you know your answers are correct.

Enter your fractions and your explanation in the space provided.

Two fractions that can replace the question mark are $\frac{7}{7}$ and $\frac{4}{4}$ they can replace it because they are equal to one whole so it will make the product the same.

Score Point 4B

This question has four parts.

Part A

A teacher wrote three expressions.

Which expression has a product **greater than** $\frac{5}{8}$?

Select the correct answer.

$$\frac{10}{8} \times \frac{5}{8}$$

$$\frac{8}{8} \times \frac{5}{8}$$

$$\frac{3}{8} \times \frac{5}{8}$$

Part B

Then, the teacher wrote this expression.

$$15 \times \frac{2}{3}$$

Is the product of the expression greater than, less than, or equal to $\frac{2}{3}$? Explain your reasoning.

Enter your answer and your explanation in the space provided.

$$15 \times \frac{2}{3} = \frac{30}{3} = 10. 10 \text{ is greater than } \frac{2}{3}.$$

Part C

Next, the teacher asked a student to find the products of these expressions.

$$30 \times \frac{5}{4}$$

$$30 \times \frac{3}{4}$$

Without multiplying, determine which of these expressions has a product **greater than** 30. Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

I know that $30 \times \frac{5}{4}$ is greater than 30 because $\frac{5}{4}$ is greater than 1. $\frac{3}{4}$ is less than 1.

Part D

Finally, the teacher wrote this equation.

$$\frac{13}{7} \times \boxed{?} = \frac{13}{7}$$

Write **two** fractions that can replace the $\boxed{?}$ to make the equation true. Explain how you know your answers are correct.

Enter your fractions and your explanation in the space provided.

$\frac{9}{9}$ and $\frac{5}{5}$ could replace the fraction because they are both equal to 1. $\frac{13}{7} \times 1 = \frac{13}{7}$.

Score Point 3

This question has four parts.

Part A

A teacher wrote three expressions.

Which expression has a product **greater than** $\frac{5}{8}$?

Select the correct answer.

$$\frac{10}{8} \times \frac{5}{8}$$

$$\frac{8}{8} \times \frac{5}{8}$$

$$\frac{3}{8} \times \frac{5}{8}$$

Part B

Then, the teacher wrote this expression.

$$15 \times \frac{2}{3}$$

Is the product of the expression greater than, less than, or equal to $\frac{2}{3}$? Explain your reasoning.

Enter your answer and your explanation in the space provided.

$15 \times \frac{2}{3}$ is greater than $\frac{2}{3}$ I know this because anything times a number greater than one will be more than the fraction you multiplied the whole number by.

Part C

Next, the teacher asked a student to find the products of these expressions.

$$30 \times \frac{5}{4}$$

$$30 \times \frac{3}{4}$$

Without multiplying, determine which of these expressions has a product **greater than** 30. Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

$30 \times \frac{5}{4}$ is greater than 30 because you multiply the 30 by something greater than one so you get a product greater than 30.

Part D

Finally, the teacher wrote this equation.

$$\frac{13}{7} \times \boxed{?} = \frac{13}{7}$$

Write **two** fractions that can replace the $\boxed{?}$ to make the equation true. Explain how you know your answers are correct.

Enter your fractions and your explanation in the space provided.

Both $\frac{4}{4}$ and $\frac{1}{1}$ can replace ? because they are both equal to one and $\frac{13}{7} = \frac{13}{7}$ if you multiply them by one they will stay the same so they won't get bigger or smaller.

Score Point 2

This question has four parts.

Part A

A teacher wrote three expressions.

Which expression has a product **greater than** $\frac{5}{8}$?

Select the correct answer.

$$\frac{10}{8} \times \frac{5}{8}$$

$$\frac{8}{8} \times \frac{5}{8}$$

$$\frac{3}{8} \times \frac{5}{8}$$

Part B

Then, the teacher wrote this expression.

$$15 \times \frac{2}{3}$$

Is the product of the expression greater than, less than, or equal to $\frac{2}{3}$? Explain your reasoning.

Enter your answer and your explanation in the space provided.

It is equal to $\frac{2}{3}$ because your just mutiplying it by 15
your not multiplying it by another fraction and
completely changing it your just making it bigger.

Part C

Next, the teacher asked a student to find the products of these expressions.

$$30 \times \frac{5}{4}$$

$$30 \times \frac{3}{4}$$

Without multiplying, determine which of these expressions has a product **greater than** 30. Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

The first one is bigger because $\frac{5}{4}$ is also equal to $1\frac{1}{4}$
witch is over 1 and $\frac{3}{4}$ is less than 1.

Part D

Finally, the teacher wrote this equation.

$$\frac{13}{7} \times \boxed{?} = \frac{13}{7}$$

Write **two** fractions that can replace the $\boxed{?}$ to make the equation true. Explain how you know your answers are correct.

Enter your fractions and your explanation in the space provided.

$\frac{7}{7}$ and $\frac{3}{3}$ because both those are equal to one.

Score Point 1

This question has four parts.

Part A

A teacher wrote three expressions.

Which expression has a product **greater than** $\frac{5}{8}$?

Select the correct answer.

$$\frac{10}{8} \times \frac{5}{8}$$

$$\frac{8}{8} \times \frac{5}{8}$$

$$\frac{3}{8} \times \frac{5}{8}$$

Part B

Then, the teacher wrote this expression.

$$15 \times \frac{2}{3}$$

Is the product of the expression greater than, less than, or equal to $\frac{2}{3}$? Explain your reasoning.

Enter your answer and your explanation in the space provided.

$$\frac{30}{45}$$

Part C

Next, the teacher asked a student to find the products of these expressions.

$$30 \times \frac{5}{4}$$

$$30 \times \frac{3}{4}$$

Without multiplying, determine which of these expressions has a product **greater than** 30. Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

$$\frac{150}{120} \text{ and } \frac{90}{120}$$

Part D

Finally, the teacher wrote this equation.

$$\frac{13}{7} \times \boxed{?} = \frac{13}{7}$$

Write **two** fractions that can replace the $\boxed{?}$ to make the equation true. Explain how you know your answers are correct.

Enter your fractions and your explanation in the space provided.

$$\frac{52}{49}$$

Score Point 0

This question has four parts.

Part A

A teacher wrote three expressions.

Which expression has a product **greater than** $\frac{5}{8}$?

Select the correct answer.

$$\frac{10}{8} \times \frac{5}{8}$$

$$\frac{8}{8} \times \frac{5}{8}$$

$$\frac{3}{8} \times \frac{5}{8}$$

Part B

Then, the teacher wrote this expression.

$$15 \times \frac{2}{3}$$

Is the product of the expression greater than, less than, or equal to $\frac{2}{3}$? Explain your reasoning.

Enter your answer and your explanation in the space provided.

The product is equal to

Part C

Next, the teacher asked a student to find the products of these expressions.

$$30 \times \frac{5}{4}$$

$$30 \times \frac{3}{4}$$

Without multiplying, determine which of these expressions has a product **greater than** 30. Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

The $30 \times \frac{3}{4}$

Part D

Finally, the teacher wrote this equation.

$$\frac{13}{7} \times \boxed{?} = \frac{13}{7}$$

Write **two** fractions that can replace the $\boxed{?}$ to make the equation true. Explain how you know your answers are correct.

Enter your fractions and your explanation in the space provided.

$$\frac{13}{2}$$