

2022 MCAS Sample Student Work and Scoring Guide

Grade 3 Mathematics

Question 5: Constructed-Response

Reporting Category: Number and Operations—Fractions

Standard: [3.NF.A.2](#) - Understand a fraction as a number on the number line; represent fractions on a number line diagram.

Item Description: Plot points to show the location of fractions on a given partitioned number line and give instructions on how to determine where to plot a fraction greater than one on a given partitioned number line.

Calculator: Not allowed

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Scoring Guide

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

Score*	Description
3A	The student response demonstrates an exemplary understanding of the Number & Operations—Fractions concepts involved in understanding a fraction is a number on the number line and understanding how to represent fractions on a number line diagram. The student plots the locations of fractions less than one and greater than one on given number line diagrams and explains how to determine where to plot the points.
3B	
2	The student response contains good evidence of an understanding of the Number & Operations—Fractions concepts involved in understanding a fraction is a number on the number line and understanding how to represent fractions on a number line diagram. 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 contains minimal evidence of an understanding of the Number & Operations—Fractions concepts involved in understanding a fraction is a number on the number line and understanding how to represent fractions on a number line diagram. 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 Number & Operations—Fractions concepts involved in understanding a fraction is a number on the number line and understanding how to represent fractions on a number line diagram. 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.

Part A

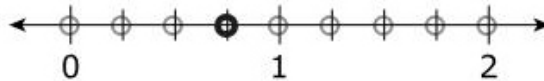
Plot the point that represents the location of $\frac{1}{4}$ on this number line.

Select a place on the number line to plot the point.

**Part B**

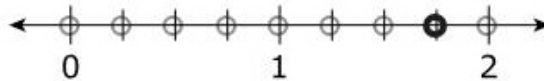
Plot the point that represents the location of $\frac{3}{4}$ on this number line.

Select a place on the number line to plot the point.

**Part C**

Plot the point that represents the location of $\frac{7}{4}$ on this number line **and** explain how you know your answer is correct.

Select a place on the number line to plot the point **and** enter your explanation in the space provided.



I know my answer is correct because i counted the number of ticks, then i knew there were fourths. Then i counted the ticks till i got to $\frac{7}{4}$.

Score Point 3B

This question has three parts.

Part A

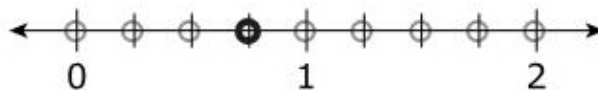
Plot the point that represents the location of $\frac{1}{4}$ on this number line.

Select a place on the number line to plot the point.

**Part B**

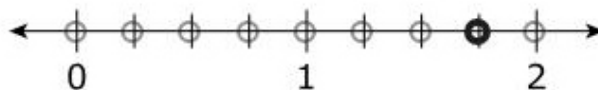
Plot the point that represents the location of $\frac{3}{4}$ on this number line.

Select a place on the number line to plot the point.

**Part C**

Plot the point that represents the location of $\frac{7}{4}$ on this number line **and** explain how you know your answer is correct.

Select a place on the number line to plot the point **and** enter your explanation in the space provided.



8 fourths is 2 so -1 fourth = 7 fourths

Score Point 2

This question has three parts.

Part A

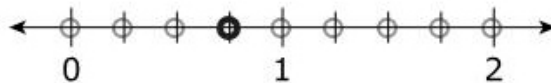
Plot the point that represents the location of $\frac{1}{4}$ on this number line.

Select a place on the number line to plot the point.

**Part B**

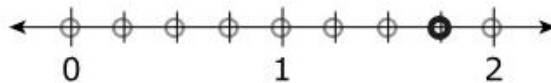
Plot the point that represents the location of $\frac{3}{4}$ on this number line.

Select a place on the number line to plot the point.

**Part C**

Plot the point that represents the location of $\frac{7}{4}$ on this number line **and** explain how you know your answer is correct.

Select a place on the number line to plot the point **and** enter your explanation in the space provided.



I know to plot $\frac{7}{4}$ next to the two because I count until there are seven spaces so that is how I think I know the answer.

Score Point 1

This question has three parts.

Part A

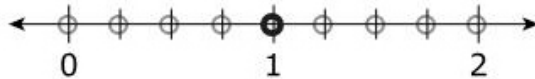
Plot the point that represents the location of $\frac{1}{4}$ on this number line.

Select a place on the number line to plot the point.

**Part B**

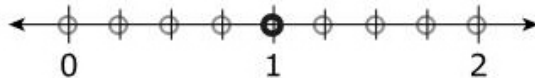
Plot the point that represents the location of $\frac{3}{4}$ on this number line.

Select a place on the number line to plot the point.

**Part C**

Plot the point that represents the location of $\frac{7}{4}$ on this number line **and** explain how you know your answer is correct.

Select a place on the number line to plot the point **and** enter your explanation in the space provided.



I think i am right because $\frac{7}{4}$ so the 7 is how much there are and 4 is where to stop. so you have to count 4 lines and then when your done mark where you stoped counting 4.

Score Point 0

This question has three parts.

Part A

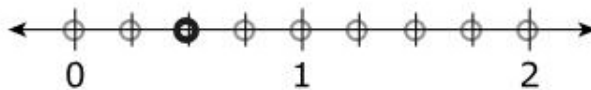
Plot the point that represents the location of $\frac{1}{4}$ on this number line.

Select a place on the number line to plot the point.

**Part B**

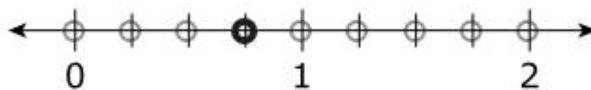
Plot the point that represents the location of $\frac{3}{4}$ on this number line.

Select a place on the number line to plot the point.

**Part C**

Plot the point that represents the location of $\frac{7}{4}$ on this number line **and** explain how you know your answer is correct.

Select a place on the number line to plot the point **and** enter your explanation in the space provided.



$\frac{6}{6}$ equals 1 whole