

2025 MCAS Sample Student Work and Scoring Guide

Grade 5 Mathematics

Question 7: Constructed-Response

Reporting Category: Measurement and Data

Standard: [5.MD.A.1](#) - Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Item Description: Complete conversions between yards, feet, and inches and solve word problems involving addition and subtraction with conversion of lengths in both whole-number and fractional units.

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 Measurement and Data concepts involved in converting among different-sized measurement units within a given measurement system and using these conversions in solving multi-step, real-world problems. The student correctly converts feet to inches, converts yards to feet to solve a problem, converts measurements in different units to the same unit to compare lengths and solve a problem, and identifies multiple measurements that add to a given length.
4B	
3	The student response demonstrates a good understanding of the Measurement and Data concepts involved in converting among different-sized measurement units within a given measurement system and using these conversions in solving multi-step, real-world problems. 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 Measurement and Data concepts involved in converting among different-sized measurement units within a given measurement system and using these conversions in solving multi-step, real-world problems. 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 Measurement and Data concepts involved in converting among different-sized measurement units within a given measurement system and using these conversions in solving multi-step, real-world problems.
0	The student response contains insufficient evidence of an understanding of the Measurement and Data concepts involved in converting among different-sized measurement units within a given measurement system and using these conversions in solving multi-step, real-world problems. 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.

An artist uses pieces of wire to create sculptures. The lengths of five different pieces of wire are shown in this table.

Lengths of Wire

Piece	Length
R	30 inches
S	4 yards
T	9 feet
Y	90 inches
Z	$\frac{3}{2}$ feet

Part A

What is the length, in **inches**, of piece T?

Enter your answer in the box.

inches

Part B

What is the difference, in **feet**, between the length of piece S and the length of piece T? Show or explain how you got your answer.

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

The difference between 4 yards and 9 feet is 3 feet because if you turn 4 yards into feet you get 12 and $12 - 9 = 3$ ft.

Part C

The artist wants to create a design that requires a total length of 10 feet of wire. The artist will attach piece Y to piece Z, with no gaps or overlaps.

Will the new piece formed by attaching piece Y to piece Z have a total length of 10 feet? Show or explain how you got your answer.

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

No adding Y and Z together only makes 9ft because $\frac{3}{2}$ ft = $1\frac{1}{2}$ ft
 $90 \text{ in} = 7\frac{1}{2}$ ft if you add $7\frac{1}{2}$ ft + $1\frac{1}{2}$ ft = 9 ft you get 9ft.

Part D

The artist wants to build a sculpture that uses a total length of $14\frac{1}{2}$ feet of wire. The artist will attach pieces of wire with no gaps or overlaps.

Which pieces of wire can the artist attach to have a total length of **exactly** $14\frac{1}{2}$ feet? Show or explain how you got your answer.

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

I think that if you use S and R you will get exactly $14\frac{1}{2}$ ft because
 $S = 12 \text{ ft}$ and $R = 2\frac{1}{2} \text{ ft}$ and $12 \text{ ft} + 2\frac{1}{2} \text{ ft} = 14\frac{1}{2} \text{ ft}$.

Score Point 4B

This question has four parts.

An artist uses pieces of wire to create sculptures. The lengths of five different pieces of wire are shown in this table.

Lengths of Wire	
Piece	Length
R	30 inches
S	4 yards
T	9 feet
Y	90 inches
Z	$3\frac{3}{4}$ feet

Part A

What is the length, in **inches**, of piece T?

Enter your answer in the box.

108 inches

Part B

What is the difference, in **feet**, between the length of piece S and the length of piece T? Show or explain how you got your answer.

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

The difference between the length of peice S and the length of peice T is 3 feet. I knew there was 3 feet in a yard so to convert S to feet I did $4 \times 3 = 12$ feet and then I did $12 - 9 = 3$ feet

Part C

The artist wants to create a design that requires a total length of 10 feet of wire. The artist will attach piece Y to piece Z, with no gaps or overlaps.

Will the new piece formed by attaching piece Y to piece Z have a total length of 10 feet? Show or explain how you got your answer.

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

No. The new peice formed by attaching peice Y to peice Z with no gaps or overlaps will not have a total length of 10 feet. First I converted Y into feet by doing $90 \div 12 = 7\frac{1}{2}$ because the are 12 inches in a foot. Then since Z, $3\frac{3}{4}$ feet also is $1\frac{1}{2}$ feet I added $7\frac{1}{2} + 1\frac{1}{2} = 9$ feet not 10

Part D

The artist wants to build a sculpture that uses a total length of $14\frac{1}{2}$ feet of wire. The artist will attach pieces of wire with no gaps or overlaps.

Which pieces of wire can the artist attach to have a total length of **exactly** $14\frac{1}{2}$ feet? Show or explain how you got your answer.

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

The artist can attach peices R and S to have a total length of exactly $14\frac{1}{2}$. First I converted all of the lengths to feet and then I tried adding them to get the sum of $14\frac{1}{2}$. When I converted R to feet I got $2\frac{1}{2}$ feet and when I did S I had 12 feet and when I added $2\frac{1}{2} + 12$ I got $14\frac{1}{2}$ as the sum

Score Point 3

This question has four parts.

An artist uses pieces of wire to create sculptures. The lengths of five different pieces of wire are shown in this table.

Lengths of Wire	
Piece	Length
R	30 inches
S	4 yards
T	9 feet
Y	90 inches
Z	$\frac{3}{2}$ feet

Part A

What is the length, in **inches**, of piece T?

Enter your answer in the box.

108 inches

Part B

What is the difference, in **feet**, between the length of piece S and the length of piece T? Show or explain how you got your answer.

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

9 ft – 3 ft = 6 ft

Part C

The artist wants to create a design that requires a total length of 10 feet of wire. The artist will attach piece Y to piece Z, with no gaps or overlaps.

Will the new piece formed by attaching piece Y to piece Z have a total length of 10 feet? Show or explain how you got your answer.

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

90 in = 7 ft 6 in
 $\frac{3}{2}$ ft = 1 ft 6 in
1 ft 6 in + 7 ft 6 in = 9 ft
The wires will not have a total length of 10 ft.

Part D

The artist wants to build a sculpture that uses a total length of $14\frac{1}{2}$ feet of wire. The artist will attach pieces of wire with no gaps or overlaps.

Which pieces of wire can the artist attach to have a total length of **exactly** $14\frac{1}{2}$ feet? Show or explain how you got your answer.

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

$S + R = 14\frac{1}{2}$ ft
 $12\text{ ft} + 2\text{ ft } 6\text{ in} = 14\frac{1}{2}$ ft

Score Point 2

This question has four parts.

An artist uses pieces of wire to create sculptures. The lengths of five different pieces of wire are shown in this table.

Lengths of Wire	
Piece	Length
R	30 inches
S	4 yards
T	9 feet
Y	90 inches
Z	$\frac{3}{4}$ feet

Part A

What is the length, in **inches**, of piece T?

Enter your answer in the box.

108 inches

Part B

What is the difference, in **feet**, between the length of piece S and the length of piece T? Show or explain how you got your answer.

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

9 – 4 = 5

5 feet

Part C

The artist wants to create a design that requires a total length of 10 feet of wire. The artist will attach piece Y to piece Z, with no gaps or overlaps.

Will the new piece formed by attaching piece Y to piece Z have a total length of 10 feet? Show or explain how you got your answer.

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

No. $Y = 7\frac{1}{2}$

$Z = 1\frac{1}{2}$

$7\frac{1}{2} + 1\frac{1}{2} = 9$

Part D

The artist wants to build a sculpture that uses a total length of $14\frac{1}{2}$ feet of wire. The artist will attach pieces of wire with no gaps or overlaps.

Which pieces of wire can the artist attach to have a total length of **exactly** $14\frac{1}{2}$ feet? Show or explain how you got your answer.

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

Z,Y,S

Score Point 1

This question has four parts.

An artist uses pieces of wire to create sculptures. The lengths of five different pieces of wire are shown in this table.

Lengths of Wire	
Piece	Length
R	30 inches
S	4 yards
T	9 feet
Y	90 inches
Z	$\frac{3}{2}$ feet

Part A

What is the length, in **inches**, of piece T?

Enter your answer in the box.

inches

Part B

What is the difference, in **feet**, between the length of piece S and the length of piece T? Show or explain how you got your answer.

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

Part C

The artist wants to create a design that requires a total length of 10 feet of wire. The artist will attach piece Y to piece Z, with no gaps or overlaps.

Will the new piece formed by attaching piece Y to piece Z have a total length of 10 feet? Show or explain how you got your answer.

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

Part D

The artist wants to build a sculpture that uses a total length of $14\frac{1}{2}$ feet of wire. The artist will attach pieces of wire with no gaps or overlaps.

Which pieces of wire can the artist attach to have a total length of **exactly** $14\frac{1}{2}$ feet? Show or explain how you got your answer.

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

Score Point 0

This question has four parts.

An artist uses pieces of wire to create sculptures. The lengths of five different pieces of wire are shown in this table.

Lengths of Wire

Piece	Length
R	30 inches
S	4 yards
T	9 feet
Y	90 inches
Z	$\frac{3}{2}$ feet

Part A

What is the length, in **inches**, of piece T?

Enter your answer in the box.

9 inches

Part B

What is the difference, in **feet**, between the length of piece S and the length of piece T? Show or explain how you got your answer.

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

Peice S is 4 yards and peice T is 9 feet so if you do 9×4 you will get 49 because the feet.

Part C

The artist wants to create a design that requires a total length of 10 feet of wire. The artist will attach piece Y to piece Z, with no gaps or overlaps.

Will the new piece formed by attaching piece Y to piece Z have a total length of 10 feet? Show or explain how you got your answer.

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

so if you do $90 \frac{3}{2}$ and multiply it you will get 100 because if you do 112×123 you would get 336 and if you do $336 - 124$ you would get 212 and then if you take the 112 and put it with the 212 and do $212 - 112$ you will get 100.

Part D

The artist wants to build a sculpture that uses a total length of $14\frac{1}{2}$ feet of wire. The artist will attach pieces of wire with no gaps or overlaps.

Which pieces of wire can the artist attach to have a total length of **exactly** $14\frac{1}{2}$ feet? Show or explain how you got your answer.

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

Well if 14 and a half feet of the wire was exactly 14 and a half the on peice thar will be 14 and a half is gonna be Z