

# 2025 MCAS Sample Student Work and Scoring Guide

## Grade 10 Mathematics

### Question 6: Constructed-Response

**Reporting Category:** Statistics and Probability

**Standard:** [S-ID.B.6](#) - Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.

**Item Description:** Given a set of data, create a scatter plot, describe the relationship of the variables, interpolate the data, and create an equation that represents the data.

**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
<a href="#">4A</a>	The student response demonstrates an exemplary understanding of the Statistics and Probability concepts involved in representing data on two quantitative variables on a scatter plot and describing how the variables are related. The student correctly creates a scatter plot from data in a table, describes the relationship of the variables, interpolates, and creates an equation that represents the data.
<a href="#">4B</a>	
<a href="#">3</a>	The student response demonstrates a good understanding of the Statistics and Probability concepts involved in representing data on two quantitative variables on a scatter plot and describing how the variables are related. 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.
<a href="#">2</a>	The student response demonstrates a fair understanding of the Statistics and Probability concepts involved in representing data on two quantitative variables on a scatter plot and describing how the variables are related. While some aspects of the task are completed correctly, others are not. The mixed evidence provided by the student merits 2 points.
<a href="#">1</a>	The student response demonstrates a minimal understanding of the Statistics and Probability concepts involved in representing data on two quantitative variables on a scatter plot and describing how the variables are related.
<a href="#">0</a>	The student response contains insufficient evidence of an understanding of the Statistics and Probability concepts involved in representing data on two quantitative variables on a scatter plot and describing how the variables are related. 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.

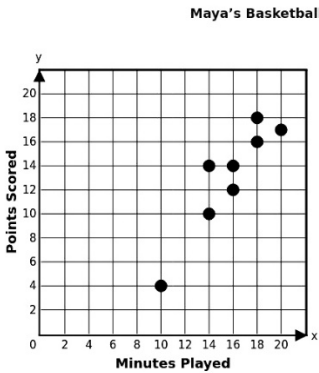
Maya plays on her high school basketball team. This table shows  $x$ , the number of minutes she played, and  $y$ , the number of points she scored, in each of the first eight games of the season.

Maya's Basketball Games	
Minutes Played, $x$	Points Scored, $y$
10	4
14	10
14	14
16	12
16	14
18	16
18	18
20	17

Part A

Create a scatter plot using the data from the table.

Select the places on this coordinate plane to plot the points.



Part B

Based on the data, which of the following describes the correlation between the number of minutes Maya played and the number of points she scored per game?

- ☒ A. strong positive correlation      ☐ B. weak positive correlation
- ☐ C. strong negative correlation      ☐ D. weak negative correlation

Part C

Based on the data, what is the expected number of points Maya will score if she plays in a game for 12 minutes? Show or explain how you got your answer.

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

About 9 times. I got this by finding the average of the points she scored in 10 minutes and the amount of points she scored in 14 minutes.

Part D

Create a linear equation that could represent the data.

Enter your equation in the space provided.

$y = \frac{3}{2}x - 9$

Score Point 4B

This question has four parts.

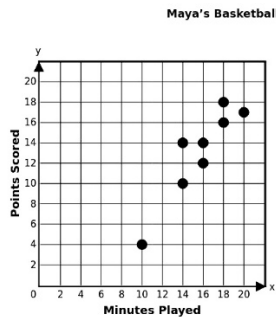
Maya plays on her high school basketball team. This table shows  $x$ , the number of minutes she played, and  $y$ , the number of points she scored, in each of the first eight games of the season.

Maya's Basketball Games	
Minutes Played, $x$	Points Scored, $y$
10	4
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14	14
16	12
16	14
18	16
18	18
20	17

**Part A**

Create a scatter plot using the data from the table.

Select the places on this coordinate plane to plot the points.



**Part B**

Based on the data, which of the following describes the correlation between the number of minutes Maya played and the number of points she scored per game?

☒ A. strong positive correlation      ☐ B. weak positive correlation

☐ C. strong negative correlation      ☐ D. weak negative correlation

**Part C**

Based on the data, what is the expected number of points Maya will score if she plays in a game for 12 minutes? Show or explain how you got your answer.

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

the expected number of points Maya will score if she plays for 12 minutes is 7 points.

$$\frac{10-4}{2} = 3$$
$$4 + 3 = 7$$

**Part D**

Create a linear equation that could represent the data.

Enter your equation in the space provided.

$$\frac{(10-4)}{14-10} = \frac{6}{4} = \frac{3}{2}$$
$$y = \frac{3}{2}x + b$$
$$4 = 15 + b$$
$$b = -11$$
$$y = \frac{3}{2}x - 11$$

Score Point 3

This question has four parts.

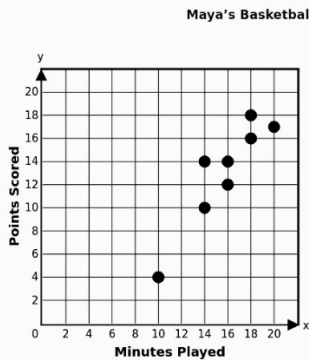
Maya plays on her high school basketball team. This table shows  $x$ , the number of minutes she played, and  $y$ , the number of points she scored, in each of the first eight games of the season.

Maya's Basketball Games	
Minutes Played, $x$	Points Scored, $y$
10	4
14	10
14	14
16	12
16	14
18	16
18	18
20	17

**Part A**

Create a scatter plot using the data from the table.

Select the places on this coordinate plane to plot the points.



**Part B**

Based on the data, which of the following describes the correlation between the number of minutes Maya played and the number of points she scored per game?

☒ A. strong positive correlation      ☐ B. weak positive correlation

☐ C. strong negative correlation      ☐ D. weak negative correlation

**Part C**

Based on the data, what is the expected number of points Maya will score if she plays in a game for 12 minutes? Show or explain how you got your answer.

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

She is expected to score 8 points in 12 minutes. This is because this graph has a strong positive correlation, and when a line is drawn through it, it passes right through the 8 when it hits the 12 on the x - axis.

**Part D**

Create a linear equation that could represent the data.

Enter your equation in the space provided.

$y = \frac{2}{3}x + 4$

Score Point 2

This question has four parts.

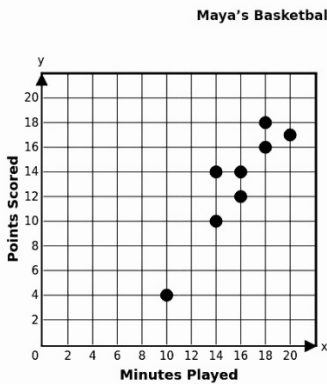
Maya plays on her high school basketball team. This table shows  $x$ , the number of minutes she played, and  $y$ , the number of points she scored, in each of the first eight games of the season.

Maya's Basketball Games	
Minutes Played, $x$	Points Scored, $y$
10	4
14	10
14	14
16	12
16	14
18	16
18	18
20	17

**Part A**

Create a scatter plot using the data from the table.

Select the places on this coordinate plane to plot the points.



**Part B**

Based on the data, which of the following describes the correlation between the number of minutes Maya played and the number of points she scored per game?

☒ A. strong positive correlation      ☐ B. weak positive correlation

☐ C. strong negative correlation      ☐ D. weak negative correlation

**Part C**

Based on the data, what is the expected number of points Maya will score if she plays in a game for 12 minutes? Show or explain how you got your answer.

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

her expected points will be 1

**Part D**

Create a linear equation that could represent the data.

Enter your equation in the space provided.

$8x + 8y = 16$

Score Point 1

This question has four parts.

Maya plays on her high school basketball team. This table shows  $x$ , the number of minutes she played, and  $y$ , the number of points she scored, in each of the first eight games of the season.

Maya's Basketball Games

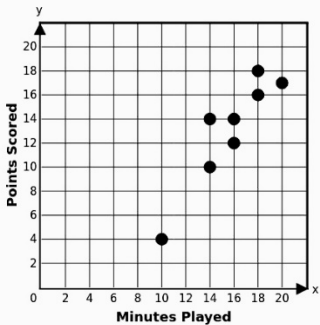
Minutes Played, $x$	Points Scored, $y$
10	4
14	10
14	14
16	12
16	14
18	16
18	18
20	17

Part A

Create a scatter plot using the data from the table.

Select the places on this coordinate plane to plot the points.

Maya's Basketball Games



Part B

Based on the data, which of the following describes the correlation between the number of minutes Maya played and the number of points she scored per game?

- ☐ A. strong positive correlation      ☐ B. weak positive correlation
- ☒ C. strong negative correlation      ☐ D. weak negative correlation

Part C

Based on the data, what is the expected number of points Maya will score if she plays in a game for 12 minutes? Show or explain how you got your answer.

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

i believe if maya was to play in another game for 12 minutes she would probabaly score 12 points according to her stats its almost equivalent to what she scores with low playtime.

Part D

Create a linear equation that could represent the data.

Enter your equation in the space provided.

$x + y$

Score Point 0

**This question has four parts.**

Maya plays on her high school basketball team. This table shows  $x$ , the number of minutes she played, and  $y$ , the number of points she scored, in each of the first eight games of the season.

Minutes Played, $x$	Points Scored, $y$
10	4
14	10
14	14
16	12
16	14
18	16
18	18
20	17

**Part A**

Create a scatter plot using the data from the table.

Select the places on this coordinate plane to plot the points.

Maya's Basketball Games

The scatter plot shows a positive correlation between minutes played and points scored. The points are plotted at (10, 4), (14, 10), (14, 14), (16, 12), (16, 14), (18, 16), (18, 18), and (20, 17).

**Part B**

Based on the data, which of the following describes the correlation between the number of minutes Maya played and the number of points she scored per game?

☐ A. strong positive correlation

☒ B. weak positive correlation

☐ C. strong negative correlation

☐ D. weak negative correlation

**Part C**

Based on the data, what is the expected number of points Maya will score if she plays in a game for 12 minutes? Show or explain how you got your answer.

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

The expected number of points Maya will score is 6 because I divided 12 and 2 and got 6 for my anwser. The rest of the numbers are all multipuls of two so I did the same thing to figure out the points score.

**Part D**

Create a linear equation that could represent the data.

Enter your equation in the space provided.

$4y = 10x + b$