

# 2025 MCAS Sample Student Work and Scoring Guide

## Grade 7 Mathematics

### Question 17: Constructed-Response

**Reporting Category:** Geometry

**Standard:** [7.G.A.1](#) - Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

**Item Description:** Identify and apply a scale to determine the dimensions and areas of rectangles given in a real-world context.

**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.*

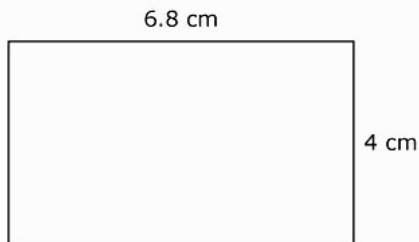
Score*	Description
<a href="#">4A</a>	The student response demonstrates an exemplary understanding of the Geometry concepts involving scale drawings of geometric figures.
<a href="#">4B</a>	
<a href="#">3</a>	The student response demonstrates a good understanding of the Geometry concepts involving scale drawings of geometric figures. 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 Geometry concepts involving scale drawings of geometric figures. 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 Geometry concepts involving scale drawings of geometric figures.
<a href="#">0</a>	The student response contains insufficient evidence of an understanding of the Geometry concepts involving scale drawings of geometric figures to 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 architect created a scale drawing of a classroom floor. Her scale drawing is in the shape of a rectangle that has a length of 6.8 centimeters and a width of 4 centimeters, as shown in this diagram.



Scale
1 cm = 5 ft.

**Part A**

Based on the diagram, what is the length, in feet, of the actual classroom floor? Show or explain how you got your answer.

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

$$6.8 \times 5 = 34\text{ft}$$

$$4 \times 5 = 20\text{ft}$$

$$\text{length} = 34\text{ft}$$

**Part B**

Based on the diagram, what is the area, in square feet, of the actual classroom floor? Show or explain how you got your answer.

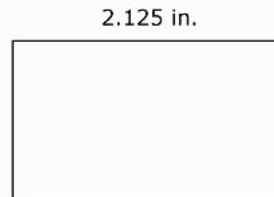
Enter your answer and your work or explanation in the space provided.

$$34\text{ft} \times 20\text{ft} = 680$$

$$\text{Area} = 680 \text{ squared ft}$$

**Part C**

The architect updated her scale drawing of the classroom floor using a different scale. The new scale drawing has a length of 2.125 inches, as shown in this diagram.



What could be the scale the architect used in her new scale drawing? Show or explain how you got your answer.

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

$$34 \div 2.125 = 16$$

$$1\text{in} = 16\text{ft}$$

**Part D**

Based on your answer to Part C, what is the width, in inches, of the new scale drawing of the classroom floor? Show or explain how you got your answer.

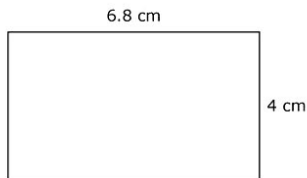
Enter your answer and your work or explanation in the space provided.

$$20 \div 16 = 1.25 \text{ in}$$

## Score Point 4B

This question has four parts.

An architect created a scale drawing of a classroom floor. Her scale drawing is in the shape of a rectangle that has a length of 6.8 centimeters and a width of 4 centimeters, as shown in this diagram.



Scale
1 cm = 5 ft.

## Part A

Based on the diagram, what is the length, in feet, of the actual classroom floor? Show or explain how you got your answer.

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

$$x \text{ cm} \cdot 5 \text{ ft} = \text{answer}$$

$$6.8 \cdot 5 = 34 \text{ ft}$$

A: The length in feet of the actual classroom floor is 34 feet

## Part B

Based on the diagram, what is the area, in square feet, of the actual classroom floor? Show or explain how you got your answer.

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

$$6.8 \cdot 5 = 34 \text{ ft}$$

$$4 \cdot 5 = 20 \text{ ft}$$

$$l = 34$$

$$w = 20$$

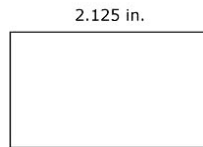
$$l \cdot w = \text{area}$$

$$34 \cdot 20 = 680$$

A: The area in square feet of the actual classroom floor is 680 square feet

## Part C

The architect updated her scale drawing of the classroom floor using a different scale. The new scale drawing has a length of 2.125 inches, as shown in this diagram.



What could be the scale the architect used in her new scale drawing? Show or explain how you got your answer.

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

The length of the shape in part A was 34 feet, so I divided 34 by 2.125 and got 16. Then I could figure out what the scale should be. Scale is below:

**Scale**

**1 in = 16 ft.**

## Part D

Based on your answer to Part C, what is the width, in inches, of the new scale drawing of the classroom floor? Show or explain how you got your answer.

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

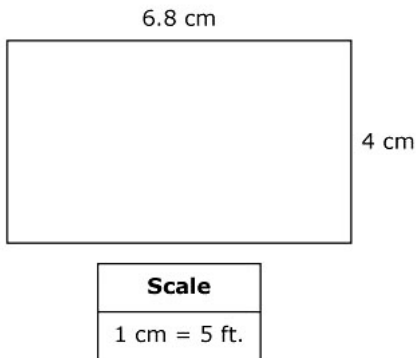
The width of the shape in part B was 20 feet, so I used the scale from part C and divided 20 by 16 to get the width. Answer is below:

A: The width in inches of the new scale drawing of the classroom floor is 1.25 inches.

**Score Point 3**

This question has four parts.

An architect created a scale drawing of a classroom floor. Her scale drawing is in the shape of a rectangle that has a length of 6.8 centimeters and a width of 4 centimeters, as shown in this diagram.

**Part A**

Based on the diagram, what is the length, in feet, of the actual classroom floor? Show or explain how you got your answer.

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

$$6.8 \times 5 = 34$$

34 feet.

**Part B**

Based on the diagram, what is the area, in square feet, of the actual classroom floor? Show or explain how you got your answer.

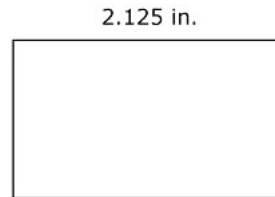
Enter your answer and your work or explanation in the space provided.

$$6.8 \times 4 = 27.2 \text{ cm}$$

$$27.2 \times 5 = 136 \text{ ft}^2$$

**Part C**

The architect updated her scale drawing of the classroom floor using a different scale. The new scale drawing has a length of 2.125 inches, as shown in this diagram.



What could be the scale the architect used in her new scale drawing? Show or explain how you got your answer.

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

$$34 \div 2.125 = 16$$

$$2.125 \times 16 = 34 \text{ feet}$$

So, the scale could be...

$$1 \text{ in} = 16 \text{ feet.}$$

**Part D**

Based on your answer to Part C, what is the width, in inches, of the new scale drawing of the classroom floor? Show or explain how you got your answer.

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

$$4 \times 5 = 20 \text{ feet}$$

$$20 \div 16 \text{ (scale)} = 1.25$$

1.25 inches for the width.

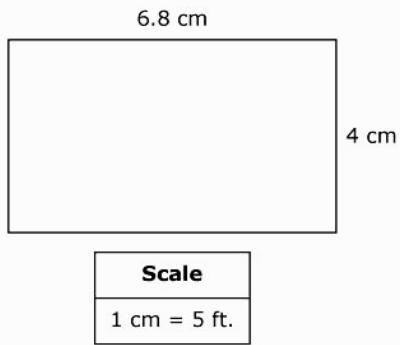
To check the answer...

$$1.25 \times 16 = 20 \text{ feet.}$$

## Score Point 2

This question has four parts.

An architect created a scale drawing of a classroom floor. Her scale drawing is in the shape of a rectangle that has a length of 6.8 centimeters and a width of 4 centimeters, as shown in this diagram.



## Part A

Based on the diagram, what is the length, in feet, of the actual classroom floor? Show or explain how you got your answer.

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

$$6.8 \text{ cm} \cdot 5 = 34 \text{ ft}$$

## Part B

Based on the diagram, what is the area, in square feet, of the actual classroom floor? Show or explain how you got your answer.

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

$$6.8 \cdot 5 = 34 \text{ ft}$$

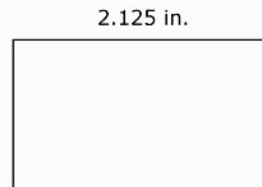
$$4 \cdot 5 = 20 \text{ ft}$$

$$6.8 \cdot 4 = 27.2 \text{ cm}$$

$$27.2 \cdot 5 = 136 \text{ ft}^2$$

## Part C

The architect updated her scale drawing of the classroom floor using a different scale. The new scale drawing has a length of 2.125 inches, as shown in this diagram.



What could be the scale the architect used in her new scale drawing? Show or explain how you got your answer.

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

$$1 \text{ in} = 16 \text{ ft}$$

$$34 \text{ ft} \div 2.125 = 16$$

## Part D

Based on your answer to Part C, what is the width, in inches, of the new scale drawing of the classroom floor? Show or explain how you got your answer.

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

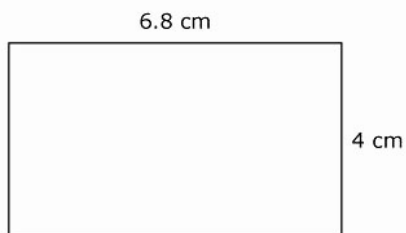
$$16 \cdot 4 = 64 \text{ ft}$$

You would get 64 feet because in the first model there is a 4cm length. If the scale for the second model is: 1 in = 16 ft, you would multiply 16 by 4.

**Score Point 1**

This question has four parts.

An architect created a scale drawing of a classroom floor. Her scale drawing is in the shape of a rectangle that has a length of 6.8 centimeters and a width of 4 centimeters, as shown in this diagram.



Scale
1 cm = 5 ft.

**Part A**

Based on the diagram, what is the length, in feet, of the actual classroom floor? Show or explain how you got your answer.

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

The length, in cm, is 6.8.  $1 \text{ cm} = 5 \text{ ft}$ .  
 $6.8 \times 5 = 34$ . The classrooms length is 34 feet long.

**Part B**

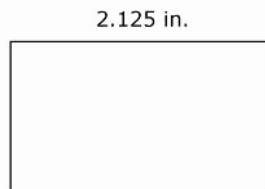
Based on the diagram, what is the area, in square feet, of the actual classroom floor? Show or explain how you got your answer.

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

$4 \times 6.8 = 27.2$ .  $27.2 \times 5 = 136$ .  
 The area of the classroom floor is 136 squared feet.

**Part C**

The architect updated her scale drawing of the classroom floor using a different scale. The new scale drawing has a length of 2.125 inches, as shown in this diagram.



What could be the scale the architect used in her new scale drawing? Show or explain how you got your answer.

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

2.125in divided by 2in = 1.0625. The scale is to add 1.0625in.

**Part D**

Based on your answer to Part C, what is the width, in inches, of the new scale drawing of the classroom floor? Show or explain how you got your answer.

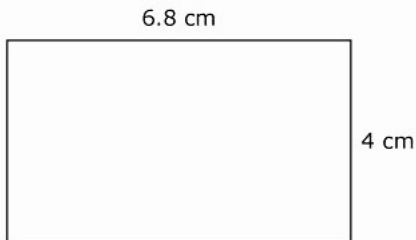
Enter your answer and your work or explanation in the space provided.

The width of the original drawing is 4cm. The scale is  $1 \text{ cm} = 5 \text{ ft}$ .  $4 \times 5 = 20$ . 20ft divided by 12 inches= 1.7. The width is 1.7inches.

**Score Point 0**

This question has four parts.

An architect created a scale drawing of a classroom floor. Her scale drawing is in the shape of a rectangle that has a length of 6.8 centimeters and a width of 4 centimeters, as shown in this diagram.



<b>Scale</b>
1 cm = 5 ft.

**Part A**

Based on the diagram, what is the length, in feet, of the actual classroom floor? Show or explain how you got your answer.

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

You would multiply 6.8 and 4 which is 27.2.

**Part B**

Based on the diagram, what is the area, in square feet, of the actual classroom floor? Show or explain how you got your answer.

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

You would take 27.2 and multiply it by 5 which is 136.0

**Part C**

The architect updated her scale drawing of the classroom floor using a different scale. The new scale drawing has a length of 2.125 inches, as shown in this diagram.

2.125 in.



What could be the scale the architect used in her new scale drawing? Show or explain how you got your answer.

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

I divided 2.125 and 5 and got 0.425

**Part D**

Based on your answer to Part C, what is the width, in inches, of the new scale drawing of the classroom floor? Show or explain how you got your answer.

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

Now, you would take your answer from part A and multiply it by 0.425 which is 11.56