

# 2023 MCAS Sample Student Work and Scoring Guide

## Grade 6 Mathematics

### Question 7: Constructed-Response

**Reporting Category:** The Number System

**Standard:** [6.NS.B.2](#) - Fluently divide multi-digit numbers using the standard algorithm.

**Item Description:** Solve a real-world problem by dividing multi-digit numbers.

**Calculator:** Not allowed

[View item in MCAS Digital Item Library](#)

### 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 Number System concepts involved in fluently dividing multi-digit numbers. The student solves a real-world problem by dividing multi-digit numbers.
<a href="#">4B</a>	
<a href="#">3</a>	The student response demonstrates a good understanding of the Number System concepts involved in fluently dividing multi-digit numbers. 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 Number System concepts involved in fluently dividing multi-digit numbers. 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 Number System concepts involved in fluently dividing multi-digit numbers.
<a href="#">0</a>	The student response contains insufficient evidence of an understanding of the Number System concepts involved in fluently dividing multi-digit numbers. 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.

A store received a shipment of the following items:

- 256 cans of soup
- 1,632 eggs

**Part A**

A store clerk will arrange the cans of soup in 4 rows. There will be an equal number of cans in each row.

How many cans of soup will the clerk arrange in each row? Show or explain how you got your answer.

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

The store clerk will put 64 cans of soup in each row. This is true because  $256 \div 4 = 64$  per row.

**Part B**

What is another way the clerk could arrange the 256 cans of soup in rows and still have an equal number of cans in each row? Show or explain how you got your answer.

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

The store clerk could arrange them in 8 to get 32 per row because 256 is a multiple of the exponents of 2 (Ex:2,4,8,16,32,64...etc). Which therefore makes it divisible by another power of 2.

**Part C**

The 1,632 eggs the store received were shipped in cartons that each contain 12 eggs.

- The clerk will place all the eggs in an empty cooler.
- Each shelf of the cooler holds 17 cartons of eggs.

How many shelves are needed to hold all of the cartons of eggs? Show or explain how you got your answer.

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

8 shelves are needed to hold all the cartons of eggs. I know this because if there are 1632 eggs then you divide by the amount a carton can hold(12) then you get 136. Finally divide that by the number of cartons a shelf can hold(17) and you get 8. You need 8 shelves to hold all the cartons of eggs.

**Part D**

The store sells 34 cartons of eggs each day.

How many days will it take until the store sells all the eggs it received? Show or explain how you got your answer.

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

If the store sells 34 cartons of eggs each day then it would take 4 days to fully sell out. I know this because 34 cartons of eggs are 2 shelves worth, and because we have 8 shelves,  $8 \div 2 = 4$ .

**Score Point 4B**

This question has four parts.

A store received a shipment of the following items:

- 256 cans of soup
- 1,632 eggs

**Part A**

A store clerk will arrange the cans of soup in 4 rows. There will be an equal number of cans in each row.

How many cans of soup will the clerk arrange in each row? Show or explain how you got your answer.

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

$$256 \div 4 = 64$$

There will be 64 cans on each row.

**Part B**

What is another way the clerk could arrange the 256 cans of soup in rows and still have an equal number of cans in each row? Show or explain how you got your answer.

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

$$64 \div 4 = 16$$

$$256 \div 16 = 16$$

you could also have 16 cans on 16 shelves.

**Part C**

The 1,632 eggs the store received were shipped in cartons that each contain 12 eggs.

- The clerk will place all the eggs in an empty cooler.
- Each shelf of the cooler holds 17 cartons of eggs.

How many shelves are needed to hold all of the cartons of eggs? Show or explain how you got your answer.

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

$$1,632 \div 12 = 136$$

$$136 \div 17 = 8$$

8 shelves are needed for all of the eggs.

**Part D**

The store sells 34 cartons of eggs each day.

How many days will it take until the store sells all the eggs it received? Show or explain how you got your answer.

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

$$34 \times 4 = 136$$

So, it will take 4 days to sell out of eggs.

**Score Point 3**

This question has four parts.

A store received a shipment of the following items:

- 256 cans of soup
- 1,632 eggs

**Part A**

A store clerk will arrange the cans of soup in 4 rows. There will be an equal number of cans in each row.

How many cans of soup will the clerk arrange in each row? Show or explain how you got your answer.

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

There will be 64 cans of soup in each row.  
 $256 \div 4 = 64$

**Part B**

What is another way the clerk could arrange the 256 cans of soup in rows and still have an equal number of cans in each row? Show or explain how you got your answer.

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

He could put 128 cans of soup per row and can have 2 rows. I know this would work because 256 is an even number, which means it can be divided by 2 and not have any left over.

**Part C**

The 1,632 eggs the store received were shipped in cartons that each contain 12 eggs.

- The clerk will place all the eggs in an empty cooler.
- Each shelf of the cooler holds 17 cartons of eggs.

How many shelves are needed to hold all of the cartons of eggs? Show or explain how you got your answer.

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

8 shelves are needed.  
 $1,632 \div 12 = 136$   
 $136 \div 17 = 8$

**Part D**

The store sells 34 cartons of eggs each day.

How many days will it take until the store sells all the eggs it received? Show or explain how you got your answer.

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

48 days.  
 $1632 \div 34 = 48$

**Score Point 2**

This question has four parts.

A store received a shipment of the following items:

- 256 cans of soup
- 1,632 eggs

**Part A**

A store clerk will arrange the cans of soup in 4 rows. There will be an equal number of cans in each row.

How many cans of soup will the clerk arrange in each row? Show or explain how you got your answer.

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

64 cans of soup.  $256 \div 4 = 64$ .

**Part B**

What is another way the clerk could arrange the 256 cans of soup in rows and still have an equal number of cans in each row? Show or explain how you got your answer.

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

They could do an 8 by 8.

**Part C**

The 1,632 eggs the store received were shipped in cartons that each contain 12 eggs.

- The clerk will place all the eggs in an empty cooler.
- Each shelf of the cooler holds 17 cartons of eggs.

How many shelves are needed to hold all of the cartons of eggs? Show or explain how you got your answer.

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

8 shelves will be needed.  
 $1632 \div 12 = 136$   $136 \div 17 = 8$  So  
8 shelves should be needed.

**Part D**

The store sells 34 cartons of eggs each day.

How many days will it take until the store sells all the eggs it received? Show or explain how you got your answer.

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

272 days.  $1632 \div 34 = 272$

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**Score Point 1**

This question has four parts.

A store received a shipment of the following items:

- 256 cans of soup
- 1,632 eggs

**Part A**

A store clerk will arrange the cans of soup in 4 rows. There will be an equal number of cans in each row.

How many cans of soup will the clerk arrange in each row? Show or explain how you got your answer.

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

64 in each row because 256 divided by 4 is 64

**Part B**

What is another way the clerk could arrange the 256 cans of soup in rows and still have an equal number of cans in each row? Show or explain how you got your answer.

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

put 16 in 8 rows

**Part C**

The 1,632 eggs the store received were shipped in cartons that each contain 12 eggs.

- The clerk will place all the eggs in an empty cooler.
- Each shelf of the cooler holds 17 cartons of eggs.

How many shelves are needed to hold all of the cartons of eggs? Show or explain how you got your answer.

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

100 shelves

**Part D**

The store sells 34 cartons of eggs each day.

How many days will it take until the store sells all the eggs it received? Show or explain how you got your answer.

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

408 days

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**Score Point 0**

This question has four parts.

A store received a shipment of the following items:

- 256 cans of soup
- 1,632 eggs

**Part A**

A store clerk will arrange the cans of soup in 4 rows. There will be an equal number of cans in each row.

How many cans of soup will the clerk arrange in each row? Show or explain how you got your answer.

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

1,024 because  $256 \times 4 = 1,024$

**Part B**

What is another way the clerk could arrange the 256 cans of soup in rows and still have an equal number of cans in each row? Show or explain how you got your answer.

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

they could put it by 2's

**Part C**

The 1,632 eggs the store received were shipped in cartons that each contain 12 eggs.

- The clerk will place all the eggs in an empty cooler.
- Each shelf of the cooler holds 17 cartons of eggs.

How many shelves are needed to hold all of the cartons of eggs? Show or explain how you got your answer.

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

37,578

**Part D**

The store sells 34 cartons of eggs each day.

How many days will it take until the store sells all the eggs it received? Show or explain how you got your answer.

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

$1,632 \div 34 = 48$