

2023 MCAS Sample Student Work and Scoring Guide

Grade 5 Mathematics

Question 8: Constructed-Response

Reporting Category: Operations and Algebraic Thinking

Standard: [5.OA.B.3](#) - Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.

Item Description: Extend two given patterns in a real-world problem and use the relationship between the two patterns to help solve the real-world problem.

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
4A	The student response demonstrates an exemplary understanding of the Operations and Algebraic Thinking concepts involved in generating two number patterns using two given rules, identifying relationships between corresponding terms, forming ordered pairs consisting of corresponding terms from the two patterns, and graphing the ordered pairs on a coordinate plane. The student correctly creates two patterns from two given rules, identifies their relationship, and uses this information to help solve a word problem.
4B	
3	The student response demonstrates a good understanding of the Operations and Algebraic Thinking concepts involved in generating two number patterns using two given rules, identifying relationships between corresponding terms, forming ordered pairs consisting of corresponding terms from the two patterns, and graphing the ordered pairs on a coordinate plane. 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 Operations and Algebraic Thinking concepts involved in generating two number patterns using two given rules, identifying relationships between corresponding terms, forming ordered pairs consisting of corresponding terms from the two patterns, and graphing the ordered pairs on a coordinate plane. 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 Operations and Algebraic Thinking concepts involved in generating two number patterns using two given rules, identifying relationships between corresponding terms, forming ordered pairs consisting of corresponding terms from the two patterns, and graphing the ordered pairs on a coordinate plane.
0	The student response contains insufficient evidence of an understanding of the Operations and Algebraic Thinking concepts involved in generating two number patterns using two given rules, identifying relationships between corresponding terms, forming ordered pairs consisting of corresponding terms from the two patterns, and graphing the ordered pairs on a coordinate plane. 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.

The Star Ticket Company and the Best Ticket Company are both selling tickets to a game.

Part A

The Star Ticket Company charges \$8 per ticket plus one \$20 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Star Ticket Company.

Enter your answers in the boxes.

Star Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	28
2	36
3	<input type="text" value="44"/>
4	<input type="text" value="52"/>

Part B

The Best Ticket Company charges \$10 per ticket plus one \$7 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Best Ticket Company.

Enter your answers in the boxes.

Best Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	17
2	27
3	<input type="text" value="37"/>
4	<input type="text" value="47"/>

Part C

What is the difference between the total costs, in dollars, of purchasing 5 tickets with a handling fee from the Star Ticket Company and purchasing 5 tickets with a handling fee from the Best Ticket Company? Show or explain how you got your answer.

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

There is a 3 dollar difference. Star Ticket company is \$60 for 5 tickets and the handling fee. Best Ticket Company is \$57 for 5 tickets and the handling fee.

Part D

Will either the Star Ticket Company or the Best Ticket Company **always** have the least total cost, in dollars, for **any** number of tickets? Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

No, neither company will always have the least total cost for any number. Because for Part C, Best was less for 5. But if you bought 10 tickets, Star would be less because Best would cost \$107, Star would cost \$100.

Score Point 4B

This question has four parts.

The Star Ticket Company and the Best Ticket Company are both selling tickets to a game.

Part A

The Star Ticket Company charges \$8 per ticket plus one \$20 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Star Ticket Company.

Enter your answers in the boxes.

Star Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	28
2	36
3	<input type="text" value="44"/>
4	<input type="text" value="52"/>

Part B

The Best Ticket Company charges \$10 per ticket plus one \$7 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Best Ticket Company.

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Best Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	17
2	27
3	<input type="text" value="37"/>
4	<input type="text" value="47"/>

Part C

What is the difference between the total costs, in dollars, of purchasing 5 tickets with a handling fee from the Star Ticket Company and purchasing 5 tickets with a handling fee from the Best Ticket Company? Show or explain how you got your answer.

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

5 tickets with the handling fee from Star Ticket would cost \$60

5 tickets with handling fee from Best Ticket would cost \$57

The difference is \$3.

Part D

Will either the Star Ticket Company or the Best Ticket Company **always** have the least total cost, in dollars, for **any** number of tickets? Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

One company won't always have the least total cost. If you buy seven tickets from Best Ticket it would cost \$77. If you buy seven tickets from Star Ticket it would cost you \$76. So Best Ticket doesn't always have the best price, just like how Star Ticket doesn't always have the best price.

Score Point 3

This question has four parts.

The Star Ticket Company and the Best Ticket Company are both selling tickets to a game.

Part A

The Star Ticket Company charges \$8 per ticket plus one \$20 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Star Ticket Company.

Enter your answers in the boxes.

Star Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	28
2	36
3	<input type="text" value="44"/>
4	<input type="text" value="52"/>

Part B

The Best Ticket Company charges \$10 per ticket plus one \$7 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Best Ticket Company.

Enter your answers in the boxes.

Best Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	17
2	27
3	<input type="text" value="37"/>
4	<input type="text" value="47"/>

Part C

What is the difference between the total costs, in dollars, of purchasing 5 tickets with a handling fee from the Star Ticket Company and purchasing 5 tickets with a handling fee from the Best Ticket Company? Show or explain how you got your answer.

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

the difference between ordering 5 tickets from one ticket company vs ordering 5 tickets from another company is \$3

$$(8 \times 5) + 20 = 40 + 20 = 60$$

$$(10 \times 5) + 7 = 50 + 7 = 57$$

$$60 - 57 = 3$$

So i know that you should order from the best ticket company because it will be cheaper.

Part D

Will either the Star Ticket Company or the Best Ticket Company **always** have the least total cost, in dollars, for **any** number of tickets? Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

the best tickey compant will actually always cost you less. i know it will cost you less money because if you buy one tickey from the best ticket company it will cost you \$17. And if you buy one tickey from the star tickey company if would cost you \$28. so i know that the best ticktet company will always cost you less than the star ticket company

Score Point 2

This question has four parts.

The Star Ticket Company and the Best Ticket Company are both selling tickets to a game.

Part A

The Star Ticket Company charges \$8 per ticket plus one \$20 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Star Ticket Company.

Enter your answers in the boxes.

Star Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	28
2	36
3	<input type="text" value="44"/>
4	<input type="text" value="52"/>

Part B

The Best Ticket Company charges \$10 per ticket plus one \$7 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Best Ticket Company.

Enter your answers in the boxes.

Best Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	17
2	27
3	<input type="text" value="37"/>
4	<input type="text" value="47"/>

Part C

What is the difference between the total costs, in dollars, of purchasing 5 tickets with a handling fee from the Star Ticket Company and purchasing 5 tickets with a handling fee from the Best Ticket Company? Show or explain how you got your answer.

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

The difference is \$2 because $\$10 - \$8 = \$2$

Part D

Will either the Star Ticket Company or the Best Ticket Company **always** have the least total cost, in dollars, for **any** number of tickets? Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

No because they would more money so the would up the dollares ?

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Score Point 1

This question has four parts.

The Star Ticket Company and the Best Ticket Company are both selling tickets to a game.

Part A

The Star Ticket Company charges \$8 per ticket plus one \$20 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Star Ticket Company.

Enter your answers in the boxes.

Star Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	28
2	36
3	<input type="text" value="44"/>
4	<input type="text" value="52"/>

Part B

The Best Ticket Company charges \$10 per ticket plus one \$7 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Best Ticket Company.

Enter your answers in the boxes.

Best Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	17
2	27
3	<input type="text" value="44"/>
4	<input type="text" value="61"/>

Part C

What is the difference between the total costs, in dollars, of purchasing 5 tickets with a handling fee from the Star Ticket Company and purchasing 5 tickets with a handling fee from the Best Ticket Company? Show or explain how you got your answer.

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

star ticket company 85\$
best ticket company 140\$

Part D

Will either the Star Ticket Company or the Best Ticket Company **always** have the least total cost, in dollars, for **any** number of tickets? Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

star ticket company

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Score Point 0

This question has four parts.

The Star Ticket Company and the Best Ticket Company are both selling tickets to a game.

Part A

The Star Ticket Company charges \$8 per ticket plus one \$20 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Star Ticket Company.

Enter your answers in the boxes.

Star Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	28
2	36
3	<input type="text" value="64"/>
4	<input type="text" value="92"/>

Part B

The Best Ticket Company charges \$10 per ticket plus one \$7 handling fee per order.

Complete the table to show the total costs, in dollars, of purchasing different numbers of tickets from the Best Ticket Company.

Enter your answers in the boxes.

Best Ticket Company

Number of Tickets	Total Cost Per Order (\$)
1	17
2	27
3	<input type="text" value="44"/>
4	<input type="text" value="61"/>

Part C

What is the difference between the total costs, in dollars, of purchasing 5 tickets with a handling fee from the Star Ticket Company and purchasing 5 tickets with a handling fee from the Best Ticket Company? Show or explain how you got your answer.

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

\$25 because $5x \cdot 5 = 25$

Part D

Will either the Star Ticket Company or the Best Ticket Company **always** have the least total cost, in dollars, for **any** number of tickets? Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

I think that the companys have least total cost because you have to pay a fee.

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