2022 MCAS Sample Student Work and Scoring Guide

Grade 5 Mathematics
Question 9: Constructed-Response

Reporting Category: Number and Operations in Base Ten
Standard: 5.NBT.B.7 - Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction and between multiplication and division; relate the strategy to a written method and explain the reasoning used.
Item Description: Solve multi-step real-world problems using the four operations with given whole numbers and decimals to hundredths.
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 Number and Operations in Base Ten concepts involved in adding, subtracting, multiplying, and dividing decimals to hundredths using concrete models or drawings, strategies based on place value, properties of operations, or the relationship between addition and subtraction and between multiplication and
4B	division, and relating the strategy to a written method and explaining the reasoning used. The student correctly adds, subtracts, multiplies, and divides decimals to hundredths in problem-solving situations and explains the reasoning used when solving the problems.
3	The student response demonstrates a good understanding of the Number and Operations in Base Ten concepts involved in adding, subtracting, multiplying, and dividing decimals to hundredths using concrete models or drawings, strategies based on place value, properties of operations, or the relationship between addition and subtraction and between multiplication and division, and relating the strategy to a written method and explaining the reasoning used. 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 Number and Operations in Base Ten concepts involved in adding, subtracting, multiplying, and dividing decimals to hundredths using concrete models or drawings, strategies based on place value, properties of operations, or the relationship between addition and subtraction and between multiplication and division, and relating the strategy to a written method and explaining the reasoning used. 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 Number and Operations in Base Ten concepts involved in adding, subtracting, multiplying, and dividing decimals to hundredths using concrete models or drawings, strategies based on place value, properties of operations, or the relationship between addition and subtraction and between multiplication and division, and relating the strategy to a written method and explaining the reasoning used.
0	The student response contains insufficient evidence of an understanding of the Number and Operations in Base Ten concepts involved in adding, subtracting, multiplying, and dividing decimals to hundredths using concrete models or drawings, strategies based on place value, properties of operations, or the relationship between addition and subtraction and between multiplication and division, and relating the strategy to a written method and explaining the reasoning used. 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 students in a class are selling bracelets and pencils to raise money for a field trip.

- They will raise $1.50 for each bracelet they sell.
- They will raise $0.75 for each pencil they sell.

Part A

Nyla sold 13 bracelets.

What is the total amount of money, in dollars, Nyla raised selling bracelets? Show or explain how you got your answer.

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

Nyla raised $19.50. I know this because I took the amount of money each bracelet was ($1.50) and multiplied it by the amount of bracelets Nyla sold. (13 bracelets) The equation I did was $1.50 \times 13 = \$19.50$.

Part B

Nyla also sold 11 pencils.

What is the total amount of money, in dollars, Nyla raised selling bracelets **and** pencils? Show or explain how you got your answer.

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

Nyla raised a total of $27.75 selling braclets and pencils. I know this because I did 0.75×11 to get the amount of money she raised selling pencils. ($8.25) Then I added the two amounts of money she rasied together. $\$8.25 + \$19.50 = \$27.75$

Part C

The class goal is to raise a total of $900.

- The class has 25 students.
- Each student will raise the same amount of money.

What is the total amount of money, in dollars, Nyla still needs to raise to meet her part of the class goal? Show or explain how you got your answer.

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

> Nyla still needs to raise $8.25 to reach her part. I know this because, first I did $900 \div 25 = \$36$ to get the amount of money for each person. Then I did $\$36.00 - \$27.75$ to see how much more money Nyla needed to reach her part of $36.

Part D

Tomorrow, Nyla will sell more bracelets and pencils to raise enough money to meet her part of the class goal from Part C.

How many bracelets **and** how many pencils could Nyla sell tomorrow to raise the **exact** amount of money she still needs? Give one possible answer. Show or explain how you got your answer.

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

> Nyla can raise 4 bracelets and 3 pencils. I know this because Nyla needs $8.25 and $1.50 \times 4 = \$6.00$. Also $\$0.75 \times 3 = \$2.25$. Lastly, $\$6.00 + \$2.25 = \$8.25$.

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Score Point 4B

This question has four parts.

The students in a class are selling bracelets and pencils to raise money for a field trip.

- They will raise $1.50 for each bracelet they sell.
- They will raise $0.75 for each pencil they sell.

Part A

Nyla sold 13 bracelets.

What is the total amount of money, in dollars, Nyla raised selling bracelets? Show or explain how you got your answer.

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

$$\$1.50 \times 13 = \$19.50$$

Part B

Nyla also sold 11 pencils.

What is the total amount of money, in dollars, Nyla raised selling bracelets **and** pencils? Show or explain how you got your answer.

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

$$\$0.75 \times 11 = \$8.25$$

$$\$8.25 + \$19.50 = 27.75$$

Part C

The class goal is to raise a total of $900.

- The class has 25 students.
- Each student will raise the same amount of money.

What is the total amount of money, in dollars, Nyla still needs to raise to meet her part of the class goal? Show or explain how you got your answer.

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

$$\$900 \div 25 = \$36$$

$$\$36 - \$27.75 = \$8.25$$

Part D

Tomorrow, Nyla will sell more bracelets and pencils to raise enough money to meet her part of the class goal from Part C.

How many bracelets **and** how many pencils could Nyla sell tomorrow to raise the **exact** amount of money she still needs? Give one possible answer. Show or explain how you got your answer.

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

4 bracelets and 3 pencils

$4 \times \$1.50 = \$6.00$

$3 \times \$0.75 = \$2.25$

$\$6.00 + \$2.25 = \$8.25$

Score Point 3

This question has four parts.

The students in a class are selling bracelets and pencils to raise money for a field trip.

- They will raise $1.50 for each bracelet they sell.
- They will raise $0.75 for each pencil they sell.

Part A

Nyla sold 13 bracelets.

What is the total amount of money, in dollars, Nyla raised selling bracelets? Show or explain how you got your answer.

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

> Nyla raised $19.50,
> $1.50 \times \$13 = \$19.50$

Part B

Nyla also sold 11 pencils.

What is the total amount of money, in dollars, Nyla raised selling bracelets **and** pencils? Show or explain how you got your answer.

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

> First I solved $0.75 \times \$11 = \$8.25$
> Then I added $\$19.50 + \$8.25$, which equals $27.75

Part C

The class goal is to raise a total of $900.

- The class has 25 students.
- Each student will raise the same amount of money.

What is the total amount of money, in dollars, Nyla still needs to raise to meet her part of the class goal? Show or explain how you got your answer.

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

> Nyla still needs to raise 8.25,
> $900 \div 25 = 36$,
> $\$36.00 - \$27.75 = \$8.25$

Part D

Tomorrow, Nyla will sell more bracelets and pencils to raise enough money to meet her part of the class goal from Part C.

How many bracelets **and** how many pencils could Nyla sell tomorrow to raise the **exact** amount of money she still needs? Give one possible answer. Show or explain how you got your answer.

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

Nyla can sell 6.75 in braclets and 7.50 in pencils.

Score Point 2

This question has four parts.

The students in a class are selling bracelets and pencils to raise money for a field trip.

- They will raise $1.50 for each bracelet they sell.
- They will raise $0.75 for each pencil they sell.

Part A

Nyla sold 13 bracelets.

What is the total amount of money, in dollars, Nyla raised selling bracelets? Show or explain how you got your answer.

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

> 1.50 x 13 = $19.50

Part B

Nyla also sold 11 pencils.

What is the total amount of money, in dollars, Nyla raised selling bracelets **and** pencils? Show or explain how you got your answer.

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

> .75 x 11 = $8.25
>
> 8.25 + 19.50 = $27.75

Part C

The class goal is to raise a total of $900.

- The class has 25 students.
- Each student will raise the same amount of money.

What is the total amount of money, in dollars, Nyla still needs to raise to meet her part of the class goal? Show or explain how you got your answer.

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

> $872.25

Part D

Tomorrow, Nyla will sell more bracelets and pencils to raise enough money to meet her part of the class goal from Part C.

How many bracelets **and** how many pencils could Nyla sell tomorrow to raise the **exact** amount of money she still needs? Give one possible answer. Show or explain how you got your answer.

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

2.25

Score Point 1

This question has four parts.

The students in a class are selling bracelets and pencils to raise money for a field trip.

- They will raise $1.50 for each bracelet they sell.
- They will raise $0.75 for each pencil they sell.

Part A

Nyla sold 13 bracelets.

What is the total amount of money, in dollars, Nyla raised selling bracelets? Show or explain how you got your answer.

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

$$13 \times 1.50 = \$19.50$$

Part B

Nyla also sold 11 pencils.

What is the total amount of money, in dollars, Nyla raised selling bracelets **and** pencils? Show or explain how you got your answer.

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

$$11 \times 75 = \$8.85$$

Part C

The class goal is to raise a total of $900.

- The class has 25 students.
- Each student will raise the same amount of money.

What is the total amount of money, in dollars, Nyla still needs to raise to meet her part of the class goal? Show or explain how you got your answer.

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

$$\$900 - 25 = \$875$$

Part D

Tomorrow, Nyla will sell more bracelets and pencils to raise enough money to meet her part of the class goal from Part C.

How many bracelets **and** how many pencils could Nyla sell tomorrow to raise the **exact** amount of money she still needs? Give one possible answer. Show or explain how you got your answer.

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

I would estimate 80 bracelets and 75 pencils

Score Point 0

This question has four parts.

The students in a class are selling bracelets and pencils to raise money for a field trip.

- They will raise $1.50 for each bracelet they sell.
- They will raise $0.75 for each pencil they sell.

Part A

Nyla sold 13 bracelets.

What is the total amount of money, in dollars, Nyla raised selling bracelets? Show or explain how you got your answer.

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

$13.50   i did my work by adding

Part B

Nyla also sold 11 pencils.

What is the total amount of money, in dollars, Nyla raised selling bracelets **and** pencils? Show or explain how you got your answer.

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

$25.75 i added

Part C

The class goal is to raise a total of $900.

- The class has 25 students.
- Each student will raise the same amount of money.

What is the total amount of money, in dollars, Nyla still needs to raise to meet her part of the class goal? Show or explain how you got your answer.

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

Nyla has 38$ i did my work by add the amount of mony that part A and part B.

Part D

Tomorrow, Nyla will sell more bracelets and pencils to raise enough money to meet her part of the class goal from Part C.

How many bracelets **and** how many pencils could Nyla sell tomorrow to raise the **exact** amount of money she still needs? Give one possible answer. Show or explain how you got your answer.

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

Nyla still needs 772$ to get to 900$