

SECURE MATERIAL – Reader Name: _____
Tennessee Comprehensive Assessment Program

TCAP/CRA

2014



7

Phase II

Weights of Candies Task

Anchor Set

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Constructed Response Assessment

Weights of Candies Task

At his job, Luigi is responsible for tracking the weights of bags of small candies. Each bag of candy is supposed to weigh 187.0 grams, but due to slight variations of the candies, not all bags have the same weight.

A bag is rejected if its weight is more than 2.4 grams above or below the target weight.

- a. Luigi randomly selects bags to weigh. He selects one bag and it weighs 185.3 grams. Should this bag of candy be rejected? Explain your reasoning and write an equation that supports your position.



A large rectangular box for writing the answer to question a. In the top-left corner, there is a small icon of a hand holding a pen, indicating where to start writing.

- b. Find the least allowable weight and the greatest allowable weight for a bag of candy. Use words and equations to explain how you determined these weights.



A large rectangular box for writing the answer to question b. In the top-left corner, there is a small icon of a hand holding a pen, indicating where to start writing.



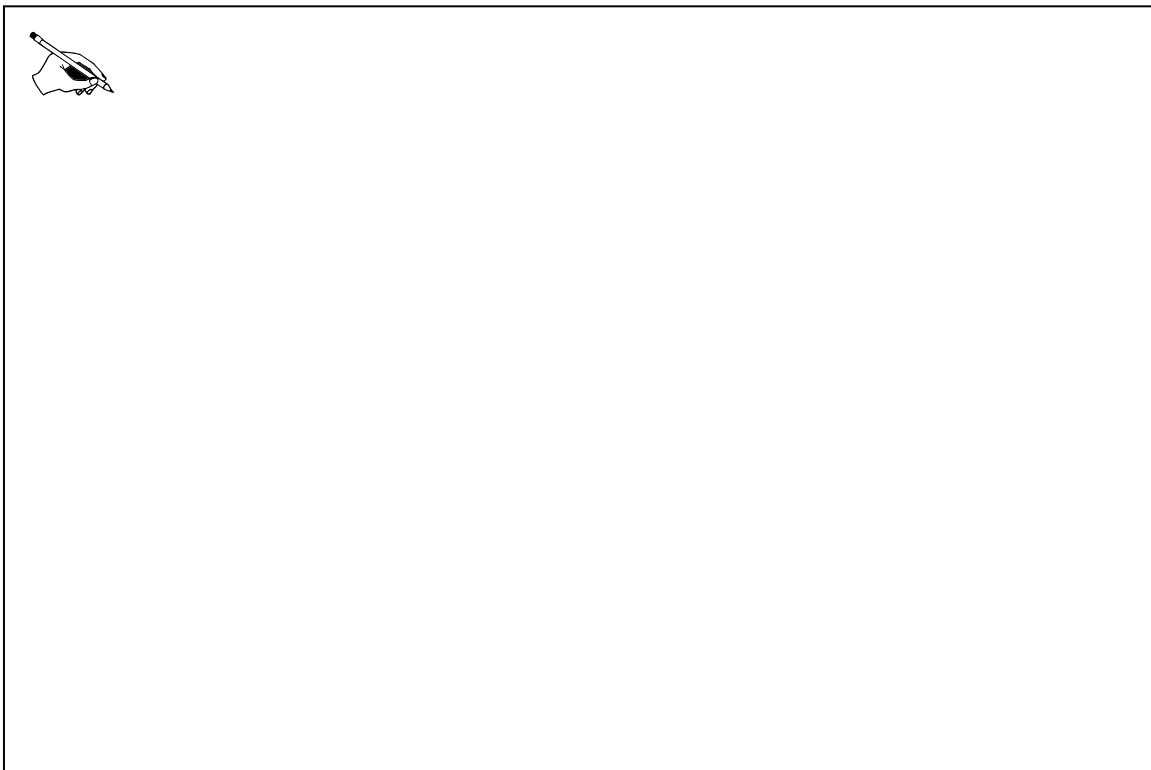
Constructed Response Assessment

Weights of Candies Task

- c. The individual bags of candy are packaged in cartons containing 10 bags each. One set of 10 bags weighs exactly 1870 grams.

The table shows the weights of 7 of the bags. Indicate possible weights for the three remaining bags of candy in this carton. Explain how you determined these weights.

	Weight (in grams)
Bag 1	186.5
Bag 2	187.0
Bag 3	188.4
Bag 4	185.6
Bag 5	188.0
Bag 6	186.8
Bag 7	187.0
Bag 8	
Bag 9	
Bag 10	



Scoring Guide

The CCSS for Mathematical Content (3 points)

7.NS.A.1x Writes and evaluates addition or subtraction expressions in part a to determine whether the bag weighing 185.3 grams should be rejected in any of the following ways: _____

- $187 - 185.3 = 1.7$;
- $187 - 2.4 = 184.6$; or
- $185.3 + 2.4 = 187.7$.

(1 Point)

7.NS.A.1z Correctly evaluates arithmetic expressions to determine the upper and lower bounds of allowable weights. _____

(1 Point)

7.NS.A.3 Determines in part c that the remaining three bags must combine to weigh 560.7 grams and then provides three weights whose sum is 560.7 grams in any of the following ways: _____

- adding the weights of bags 1 through 7, subtracting that sum from 1870 grams, and then portioning the remaining weight among bags 8 through 10;
- writing an equation of the form $x = \frac{(1870 - 1309.3)}{3}$ and then stating that each bag should weigh 186.9 grams; or
- using a guess-and-check method to find appropriate weights for each of the remaining three bags.

(1 Point)

The CCSS for Mathematical Practice (2 points)

MP2 Abstracts the target weight (187 grams) and the allowable margin (2.4 grams) from the problem situation and writes appropriate arithmetic expressions to calculate the least and greatest allowable weights in part b. _____

(1 Point)

(MP2: Reason abstractly and quantitatively.)

MP3 Constructs a reasonable argument for whether or not Luigi should reject the bag in part a, based on an appropriate calculation. Students may do this by: _____

- $187 - 185.3 = 1.7$; this difference is less than 2.4 so the bag of candy is within 2.4 grams of the target weight;
- $187 - 2.4 = 184.6$; the weight is between 184.6 and 187 grams so it is within the allowed range; or
- $185.3 + 2.4 = 187.7$; this sum is greater than 187 grams so the difference between the weight of the bag and the target weight is less than 2.4 grams.

(1 Point)

(MP3: Construct viable arguments and critique the reasoning of others.)

TOTAL POINTS: 5

The CCSS for Mathematical Content Addressed In This Task

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

7.NS.A.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.

The CCSS for Mathematical Practice*

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.


* Gray type indicates Mathematical Practices not addressed in this assessment.

Weights of Candies Task

At his job, Luigi is responsible for tracking the weights of bags of small candies. Each bag of candy is supposed to weigh 187.0 grams, but due to slight variations of the candies, not all bags have the same weight.


A bag is rejected if its weight is more than 2.4 grams above or below the target weight.

- a Luigi randomly selects bags to weigh. He selects one bag and it weighs 185.3 grams. Should this bag of candy be rejected? Explain your reasoning and write an equation that supports your position


$$\begin{array}{r} 187 \\ - 2.4 \\ \hline 184.6 \end{array}$$
 This bag should not be rejected because its weight is less than 2.4 grams less than the perfect weight of 187 grams.

$187 \pm 2.4 = 184.6$ ~~189.4~~ ~~184.6~~ ~~187 - 2.4~~

- b. Find the least allowable weight and the greatest allowable weight for a bag of candy. Use words and equations to explain how you determined these weights.

 The least allowable weight you can have is 184.6 grams. The highest weight allowable is 189.4 grams. You can figure this out by adding and subtracting 2.4 to 187.

$$\begin{array}{r} 187 \\ - 2.4 \\ \hline 184.6 \end{array} \quad \begin{array}{r} 187 \\ + 2.4 \\ \hline 189.4 \end{array}$$


184.6 00027200 189.4

Weights of Candies Task

- c. The individual bags of candy are packaged in cartons containing 10 bags each. One set of 10 bags weighs exactly 1870 grams

The table shows the weights of 7 of the bags. Indicate possible weights for the three remaining bags of candy in this carton. Explain how you determined these weights.

	Weight (in grams)
Bag 1	186.5
Bag 2	187.0
Bag 3	188.4
Bag 4	185.6
Bag 5	188.0
Bag 6	186.8
Bag 7	187.0
Bag 8	
Bag 9	
Bag 10	

 A possible way for the 3 bags to work are to have 3 bags with the weights of 186.9, 186.9, and 186.9. I got this by adding the bags we know and subtracting that from 1870. I ended with 560.7 and I divided that by 3.

$$1870 - (186.5 + 187 + 188.4 + 185.6 + 188 + 186.8 + 187)$$

$$\frac{560.7}{3} = 186.9$$

Exitho#: 000220109

Anchor 1 Litho 00027200109

Total Content Points: 3 (7.NS.A.1x, 7.NS.A.1z, 7.NS.A.3)

Total Practice Points: 2 (MP2, MP3)

The student writes a correct subtraction equation ($187 - 2.4 = 184.6$) in Part A to determine whether the bag weighing 185.3 grams should be rejected (7.NS.A.1x). In Part B, the student correctly evaluates arithmetic expressions to determine the upper (189.4 grams) and lower (184.6 grams) bounds of allowable weights (7.NS.A.1z). The student correctly determines in Part C that the remaining three bags must combine to weigh 560.7 grams, divides 560.7 by 3, and states that the three bags could each weigh 186.9 grams (7.NS.A.3). In Part B, the student abstracts the target weight and the allowable margin from the problem situation and writes appropriate arithmetic expressions ($187 - 2.4$, $187 + 2.4$) to determine the least and greatest allowable weights (MP2). The student constructs a reasonable argument in Part A for Luigi to accept the bag weighing 185.3 grams (“its weight is less than 2.4 grams less than the perfect weight of 187 grams”) (MP3).


Total Awarded Points: 5 out of 5

Weights of Candies Task

At his job, Luigi is responsible for tracking the weights of bags of small candies. Each bag of candy is supposed to weigh 187.0 grams, but due to slight variations of the candies, not all bags have the same weight.

A bag is rejected if its weight is more than 2.4 grams above or below the target weight.

- a Luigi randomly selects bags to weigh. He selects one bag and it weighs 185.3 grams. Should this bag of candy be rejected? Explain your reasoning and write an equation that supports your position.

 Luigi should keep this bag. When I worked out the equation I got 184.6 which is less than 185.3, so that bag is good.


$$189.4 \geq 187 - 2.4$$

$$y = 184.6$$

$$y = 187 - 2.4$$

$$y = 187 + 2.4$$

- b. Find the least allowable weight and the greatest allowable weight for a bag of candy. Use words and equations to explain how you determined these weights.

 The least allowable weight is 184.6. The greatest allowable weight is 189.4. I added and subtracted 2.4 to or from 187.

$$y = 187 - 2.4$$

$$y = 184.6$$

$$y = 187 + 2.4$$

$$y = 189.4$$

Litho#: 00157200109


Weights of Candies Task

- c. The individual bags of candy are packaged in cartons containing 10 bags each. One set of 10 bags weighs exactly 1870 grams

The table shows the weights of 7 of the bags. Indicate possible weights for the three remaining bags of candy in this carton. Explain how you determined these weights.

	Weight (in grams)
Bag 1	186.5
Bag 2	187.0
Bag 3	188.4
Bag 4	185.6
Bag 5	188.0
Bag 6	186.8
Bag 7	187.0
Bag 8	186.8
Bag 9	186.9
Bag 10	187.1

≈ 1309.3

 I got my answer by choosing numbers ~~numbers~~ ^{189.4} and no less than 184.6 and then added all the numbers up and got 1870. To get 1870 I put Bag 8 as 186.8 and Bag 9 as 186.8 and Bag 10 as 187.1.

Litho#: 00157200109

Anchor 2 Litho 00157200109

Total Content Points: 3 (7.NS.A.1x, 7.NS.A.1z, 7.NS.A.3)

Total Practice Points: 2 (MP2, MP3)

The student writes a correct subtraction equation ($187 - 2.4 = 184.6$) in Part A to determine whether the bag weighing 185.3 grams should be rejected (7.NS.A.1x). In Part B, the student correctly evaluates arithmetic expressions to determine the upper (189.4 grams) and lower (184.6 grams) bounds of allowable weights (7.NS.A.1z). The student correctly uses the guess-and-check method in Part C to determine acceptable weights totaling 560.7 grams for bags 8, 9, and 10. The “= 1309.3,” combined with the student’s explanation, shows that the student looked for numbers within the correct range that, added together, equaled the difference between 1309.3 and 1870 (7.NS.A.3). The student writes appropriate arithmetic expressions in Part B ($187 - 2.4$, $187 + 2.4$) to determine the least and greatest allowable weights (MP2). The student constructs a reasonable argument in Part A for Luigi to accept the bag weighing 185.3 grams (“Luigi should keep this bag. When I worked out the equation I got 184.6 which is less than 185.3 so that bag is good”) (MP3).


Total Awarded Points: 5 out of 5

Weights of Candies Task


At his job, Luigi is responsible for tracking the weights of bags of small candies. Each bag of candy is supposed to weigh 187.0 grams, but due to slight variations of the candies, not all bags have the same weight.

A bag is rejected if its weight is more than 2.4 grams above or below the target weight.

- a. Luigi randomly selects bags to weigh. He selects one bag and it weighs 185.3 grams. Should this bag of candy be rejected? Explain your reasoning and write an equation that supports your position.

 $187.0 - 185.3 = 1.7$	No because its just 1.7 under and not 2.4
$187 - 185.3 = x$ equation	

- b. Find the least allowable weight and the greatest allowable weight for a bag of candy. Use words and equations to explain how you determined these weights.

 $187 - 2.3 = x = 184.7 \text{ Lowest}$ $187 + 2.3 = x = 189.3 \text{ Highest}$
I got these weights by subtracting or adding 2.3 because 2.4 would be too low or high

Weights of Candies Task

- c. The individual bags of candy are packaged in cartons containing 10 bags each. One set of 10 bags weighs exactly 1870 grams.

The table shows the weights of 7 of the bags. Indicate possible weights for the three remaining bags of candy in this carton. Explain how you determined these weights.

	Weight (in grams)
Bag 1	186.5
Bag 2	187.0
Bag 3	188.4
Bag 4	185.6
Bag 5	188.0
Bag 6	186.8
Bag 7	187.0
Bag 8	186.9
Bag 9	186.9
Bag 10	186.9

1309.3

$1309.3 - 1870 = 560.7$

$$\begin{array}{r} 186.9 \\ 3 \overline{)560.7} \end{array}$$


I added all the weights I had then subtracted it from what all the bags would add up to be then divided 560.7 by 3 I get 186.9

Weights of Candies Task

At his job, Luigi is responsible for tracking the weights of bags of small candies. Each bag of candy is supposed to weigh 187.0 grams, but due to slight variations of the candies, not all bags have the same weight.

A bag is rejected if its weight is more than 2.4 grams above or below the target weight.


- a. Luigi randomly selects bags to weigh. He selects one bag and it weighs 185.3 grams. Should this bag of candy be rejected? Explain your reasoning and write an equation that supports your position.

 No, this bag shouldn't be rejected. If you do this ...

$$\begin{array}{r} 187.0 \\ - 185.3 \\ \hline 1.7 \end{array}$$

you will get 1.7. It can't be higher or lower than 2.4. It's 1.7, so it's ok. -T

- b. Find the least allowable weight and the greatest allowable weight for a bag of candy. Use words and equations to explain how you determined these weights.


$$\begin{array}{r} 187.0 \\ - 2.4 \\ \hline 184.6 \end{array}$$
 is the least allowable weight

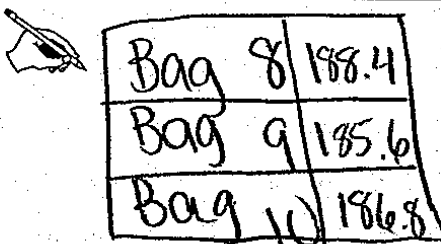
$$\begin{array}{r} 187.0 \\ + 2.4 \\ \hline 189.4 \end{array}$$
 is the greatest allowable weight

Weights of Candies Task

- c. The individual bags of candy are packaged in cartons containing 10 bags each. One set of 10 bags weighs exactly 1870 grams.

The table shows the weights of 7 of the bags. Indicate possible weights for the three remaining bags of candy in this carton. Explain how you determined these weights.

	Weight (in grams)
Bag 1	186.5
Bag 2	187.0
Bag 3	188.4
Bag 4	185.6
Bag 5	188.0
Bag 6	186.8
Bag 7	187.0
Bag 8	188.4
Bag 9	185.6
Bag 10	186.8



Bag 8	188.4
Bag 9	185.6
Bag 10	186.8


Its like a pattern.
 2 of them has 187.0
 the 1st one start at
 Bag 2. The second
 on start at Bag 7.
 So Its must be that
 way - T

Weights of Candies Task

At his job, Luigi is responsible for tracking the weights of bags of small candies. Each bag of candy is supposed to weigh 187.0 grams, but due to slight variations of the candies, not all bags have the same weight.

A bag is rejected if its weight is more than 2.4 grams above or below the target weight.


- a. Luigi randomly selects bags to weigh. He selects one bag and it weighs 185.3 grams. Should this bag of candy be rejected? Explain your reasoning and write an equation that supports your position.

 No, it should not be rejected. By subtracting, you can find the difference in the suggested weight from the actual weight.

$$\begin{array}{r} 187.0 \\ -185.3 \\ \hline 1.7 \end{array}$$

The bag is only 1.7g under weight.

- b. Find the least allowable weight and the greatest allowable weight for a bag of candy. Use words and equations to explain how you determined these weights.


$$\begin{array}{r} 187.0 \\ + 2.4 \\ \hline 189.4 \end{array}$$
 Greatest

$$\begin{array}{r} 187.0 \\ - 2.4 \\ \hline 184.6 \end{array}$$
 Least


By adding and subtracting the allowed differences, you can calculate the maximum and minimum weights.

Weights of Candies Task

- c. The individual bags of candy are packaged in cartons containing 10 bags each. One set of 10 bags weighs exactly 1870 grams.

The table shows the weights of 7 of the bags. Indicate possible weights for the three remaining bags of candy in this carton. Explain how you determined these weights.

	Weight (in grams)
Bag 1	186.5
Bag 2	187.0
Bag 3	188.4
Bag 4	185.6
Bag 5	188.0
Bag 6	186.8
Bag 7	187.0
Bag 8	187
Bag 9	187
Bag 10	186.7

 I assumed the last three were 187. After I added all of the values, I adjusted one of

Anchor 5

Litho 00357200127

Total Content Points: 3 (7.NS.A.1x, 7.NS.A.1z, 7.NS.A.3)

Total Practice Points: 1 (MP2)

The student writes a correct subtraction equation ($187 - 185.3 = 1.7$) in Part A to determine whether the bag weighing 185.3 grams should be rejected (7.NS.A.1x). In Part B, the student correctly evaluates arithmetic expressions to determine the upper (189.4 grams) and lower (184.6 grams) bounds of allowable weights (7.NS.A.1z). The student correctly uses the guess-and-check method in Part C to determine acceptable weights for bags 8, 9, and 10. No computations are shown, but the student explains the process of adding all of the existing values, guessing that each of the missing values was 187, and adjusting the values to fit the parameters (7.NS.A.3). The student writes appropriate arithmetic expressions ($187 - 2.4$, $187 + 2.4$) in Part B to determine the least and greatest allowable weights (MP2). The student attempts a reasonable argument in Part A for Luigi to accept the bag weighing 185.3 grams (“The bag is only 1.7g under weight”), but does not compare that variance to the acceptable lower limit of 2.4 grams (no credit for MP3).


Total Awarded Points: 4 out of 5

Weights of Candies Task

At his job, Luigi is responsible for tracking the weights of bags of small candies. Each bag of candy is supposed to weigh 187.0 grams, but due to slight variations of the candies, not all bags have the same weight.


A bag is rejected if its weight is more than 2.4 grams above or below the target weight

- a. Luigi randomly selects bags to weigh. He selects one bag and it weighs 185.3 grams. Should this bag of candy be rejected? Explain your reasoning and write an equation that supports your position.

 No it should not because it is .1 from being rejected.

$$187 - 185.3 = 2.3$$

- b. Find the least allowable weight and the greatest allowable weight for a bag of candy. Use words and equations to explain how you determined these weights.

 The most allowable weight is 189.4 grams and the least allowable weight is 184.6 grams.

$$187 - 2.4 = 184.6$$
$$187 + 2.4 = 189.4$$


Litho#: 00147200109

Weights of Candies Task

- c. The individual bags of candy are packaged in cartons containing 10 bags each. One set of 10 bags weighs exactly 1870 grams.

The table shows the weights of 7 of the bags. Indicate possible weights for the three remaining bags of candy in this carton. Explain how you determined these weights.

	Weight (in grams)
Bag 1	186.5
Bag 2	187.0
Bag 3	188.4
Bag 4	185.6
Bag 5	188.0
Bag 6	186.8
Bag 7	187.0
Bag 8	
Bag 9	
Bag 10	



$8: 186.9$
 $9: 186.9$
 $10: 186.9$

$$\begin{array}{r}
 1870 \\
 -1309.3 \\
 \hline
 560.7 \\
 \div 3 \\
 \hline
 186.9
 \end{array}$$

186.5
 187.0
 188.4
 185.6
 188.0
 186.8
 187.0


You add the 7 bags together to get 1309.3 then subtract that by 1870 to get 560.7 then divide that by 3 to get 186.9 per bag.

Weights of Candies Task

At his job, Luigi is responsible for tracking the weights of bags of small candies. Each bag of candy is supposed to weigh 187.0 grams, but due to slight variations of the candies, not all bags have the same weight.

A bag is rejected if its weight is more than 2.4 grams above or below the target weight.

- a. Luigi randomly selects bags to weigh. He selects one bag and it weighs 185.3 grams. Should this bag of candy be rejected? Explain your reasoning and write an equation that supports your position.


 NO the bag should not be rejected. It would equal 1.7 so it would be around the correct weight.

$$y = 187 - x$$

$$y = 187 - 185.3$$

$$y = 1.7$$

- b. Find the least allowable weight and the greatest allowable weight for a bag of candy. Use words and equations to explain how you determined these weights.

 $187 - 184.7 = 2.3$
 $187 - 189.3 = 2.3$

184.7 Lowest

189.3 Greatest

I found my answer by subtracting and adding 2.3 to 187. Which gave me the lowest, 184.7, and the greatest, 189.3.


Litho#: 00077200109

Weights of Candies Task

- c. The individual bags of candy are packaged in cartons containing 10 bags each. One set of 10 bags weighs exactly 1870 grams.

The table shows the weights of 7 of the bags. Indicate possible weights for the three remaining bags of candy in this carton. Explain how you determined these weights.

	Weight (in grams)
Bag 1	186.5
Bag 2	187.0
Bag 3	188.4
Bag 4	185.6
Bag 5	188.0
Bag 6	186.8
Bag 7	187.0
Bag 8	
Bag 9	
Bag 10	

 The three remaining bags could each be 187 grams. To find this answer you would add all of the 7 bags together to get 1309; Subtract 1870 from 1309 to get 561 when you divide that by 3 you get 187

Litho#: 00077200109

Anchor 7

Litho 00077200109

Total Content Points: 2 (7.NS.A.1x, 7.NS.A.1z)

Total Practice Points: 0

The student writes a correct subtraction expression ($187 - 185.3$) with the correct answer (1.7) in Part A to determine whether the bag weighing 185.3 grams should be rejected (7.NS.A.1x). In Part B, the student correctly evaluates incorrect arithmetic expressions to determine the upper (189.3 grams) and lower (184.7 grams) bounds of allowable weights (7.NS.A.1z). The student attempts to solve using a generally correct process in Part C but rounds 1309.3 down to 1309 when adding the first 7 bags, resulting in an incorrect combined weight (561 instead of 560.7) for bags 8, 9, and 10 (no credit for 7.NS.A.3). The student writes arithmetic expressions with incorrect upper and lower limits in Part B, using 2.3 instead of 2.4 ($187 - 2.3$, $187 + 2.3$) to determine the least and greatest allowable weights (no credit for MP2). The student attempts a reasonable argument in Part A for whether or not Luigi should reject the bag by stating, "No the bag should not be rejected. It would equal 1.7 so it would be around the correct weight," but does not compare that variance to the lower acceptable limit of 2.4 grams (no credit for MP3).


Total Awarded Points: 2 out of 5

Weights of Candies Task

At his job, Luigi is responsible for tracking the weights of bags of small candies. Each bag of candy is supposed to weigh 187.0 grams, but due to slight variations of the candies, not all bags have the same weight.


A bag is rejected if its weight is more than 2.4 grams above or below the target weight.

- a. Luigi randomly selects bags to weigh. He selects one bag and it weighs 185.3 grams. Should this bag of candy be rejected? Explain your reasoning and write an equation that supports your position.

 $187.0 = 185.3 \pm 2.4$

No, this bag of candy should not be rejected because if you add 2.4 to 185.3 you get 187.7 and if you subtract 187.7 - 187.0 its only 0.7 and is not over 2.4 grams

- b. Find the least allowable weight and the greatest allowable weight for a bag of candy. Use words and equations to explain how you determined these weights.

 The greatest allowable would be 186.9 because its only 2.3 grams, and the least allowable would be 189.2 because its only 2.2 grams


Litho#: 00067200109

Weights of Candies Task

- c. The individual bags of candy are packaged in cartons containing 10 bags each. One set of 10 bags weighs exactly 1870 grams

The table shows the weights of 7 of the bags. Indicate possible weights for the three remaining bags of candy in this carton. Explain how you determined these weights.

	Weight (in grams)
Bag 1	186.5
Bag 2	187.0
Bag 3	188.4
Bag 4	185.6
Bag 5	188.0
Bag 6	186.8
Bag 7	187.0
Bag 8	188.9
Bag 9	189.9
Bag 10	181.9


 Add all the weight together then add 188.9, 189.9, 181.9 to get 1870

Weights of Candies Task


At his job, Luigi is responsible for tracking the weights of bags of small candies. Each bag of candy is supposed to weigh 187.0 grams, but due to slight variations of the candies, not all bags have the same weight.

A bag is rejected if its weight is more than 2.4 grams above or below the target weight.

- a. Luigi randomly selects bags to weigh. He selects one bag and it weighs 185.3 grams. Should this bag of candy be rejected? Explain your reasoning and write an equation that supports your position.

 no, because it said it should not be 2.4 more $\frac{1}{2}$ this one is 1.7 less than what it is suppose to weigh

- b. Find the least allowable weight and the greatest allowable weight for a bag of candy. Use words and equations to explain how you determined these weights.

 Most: 189.4
Least: 184.6

Litho#: 00037200151

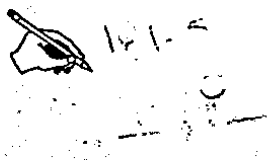
Weights of Candies Task

- c. The individual bags of candy are packaged in cartons containing 10 bags each. One set of 10 bags weighs exactly 1870 grams.

The table shows the weights of 7 of the bags. Indicate possible weights for the three remaining bags of candy in this carton. Explain how you determined these weights.

	Weight (in grams)
Bag 1	186.5
Bag 2	187.0
Bag 3	188.4
Bag 4	185.6
Bag 5	188.0
Bag 6	186.8
Bag 7	187.0
Bag 8	
Bag 9	
Bag 10	

0.5
 1.4
 -2.8
 2.4
 -1.2
 0.2



Hand-drawn diagram showing a box with a pencil and some scribbles.

Anchor 9

Litho 00037200151

Total Content Points: 1 (7.NS.A.1z)

Total Practice Points: 0

The student does not attempt an addition or subtraction expression in Part A to determine if the bag weighing 185.3 grams should be rejected (no credit for 7.NS.A.1x). In Part B, the student correctly determines the upper (189.4 grams) and lower (184.6 grams) bounds of allowable weights. Although no arithmetic expressions are shown, the response receives credit (7.NS.A.1z). The student does not attempt to solve Part C (no credit for 7.NS.A.3). The student does not attempt arithmetic expressions to determine the least and greatest allowable weights in Part B (no credit for MP2). The student attempts a reasonable argument in Part A for Luigi to accept the bag weighing 185.3 grams (“it said it should not be 2.4 more & this one is 1.7 less than what it is suppose to weigh”), but this does not compare variance to the acceptable lower limit of 2.4 grams (no credit for MP3).


Total Awarded Points: 2 out of 5

Weights of Candies Task


At his job, Luigi is responsible for tracking the weights of bags of small candies. Each bag of candy is supposed to weigh 187.0 grams, but due to slight variations of the candies, not all bags have the same weight.

A bag is rejected if its weight is more than 2.4 grams above or below the target weight.

- a. Luigi randomly selects bags to weigh. He selects one bag and it weighs 185.3 grams. Should this bag of candy be rejected? Explain your reasoning and write an equation that supports your position.

 NO because its only 1.7 grams less than the regular bags.

- b. Find the least allowable weight and the greatest allowable weight for a bag of candy. Use words and equations to explain how you determined these weights.


 184.6 because any thing less than that is more than 2.4 grams less

Weights of Candies Task

- c. The individual bags of candy are packaged in cartons containing 10 bags each. One set of 10 bags weighs exactly 1870 grams.

The table shows the weights of 7 of the bags. Indicate possible weights for the three remaining bags of candy in this carton. Explain how you determined these weights.

	Weight (in grams)
Bag 1	186.5
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Bag 4	185.6
Bag 5	188.0
Bag 6	186.8
Bag 7	187.0
Bag 8	192.9
Bag 9	192.9
Bag 10	192.9

 I Added them all up then subtracted 1291.5 from 1870 grams then divided by three and I got 192.9

Total Content Points: 0

Total Practice Points: 0

The student does not attempt an addition or subtraction expression in Part A to determine whether the bag weighing 185.3 grams should be rejected (no credit for 7.NS.A.1x). In Part B, the student correctly determines only the lower limit (184.6 grams) of allowable weights (no credit for 7.NS.A.1z). The student attempts to solve Part C by dividing the difference of 1870 and the sum of the weights of the first 7 bags by 3. The student subtracts the wrong answer, 1291.3, from 1870, resulting in weights for bags 8, 9, and 10 that are not appropriate weights, because they are outside the acceptable limits. The 192.9 grams for each bag is 3.5 grams above the acceptable upper limit of 189.4, and the combined weights of bags 8, 9, and 10 add up to 578.7 instead of 560.7, making the carton (1888 grams) too heavy (no credit for 7.NS.A.3). The student does not attempt arithmetic expressions to determine the least and greatest allowable weights in Part B (no credit for MP2). The student attempts a reasonable argument in Part A for Luigi to accept the bag weighing 185.3 grams (“No because its only 1.7 grams less then the regular bags”), but does not compare that variance to the acceptable lower limit of 2.4 grams (no credit for MP3).

Total Awarded Points: 0 out of 5