2. Albert wants to organize a party and decides to save money for it. He calculates that he needs at least $420 in 9 weeks. He already has $60. Write an inequality that Albert could use to find *x* , the **least** amount of money he should save every week for his pa rty.

Scoring Instructions:

9 T+ 60 R420

or equivalent inequality

5. A river current carried a fallen tree branch $1\frac{5}{7}$ of a mile in $\frac{5}{8}$ of an hour. At what speed is the water in the river flowing, in miles per hour?

Scoring Instructions:

$1\frac{5}{7}$ miles per hour

OR equivalent

8. The cost of plain yogurt at Yummy's Frozen Yogurt is shown in the table below.

Cup Size	**Price (in dollars)**
Small	1.45
Medium	1.75
Large	2.05

Part A. The cost of additional toppings on the plain yogurt is $0.75 each. Write an equation to find the total cost, *C*, of a medium yogurt with *t* number of toppings.

Part B. Use the equation in Part A to find the cost of a medium cup of yogurt if P= 2?

Use words and/or numbers to show your work.

Scoring Instructions:

Rubric:

2 Work demonstrates a **clear and complete** understanding of the mathematical concepts and/or procedures required by the task. Appropriate strategy is shown with clear and complete explanations and interpretations.

1 Response demonstrates a **partial** understanding of the mathematical concepts and/or procedures. Appropriate strategy is shown, but explanation or interpretation has minor flaws.

OR

Response is incorrect because of calculation errors. Work and strategy indicate a **clear** understanding of the mathematical concepts and/or procedures required by the task.

0 Response is irrelevant, inappropriate, or not provided.

SCORING EXEMPLAR

Part A – [1 point]

x The equation for the cost of a medium cup of yogurt with *t* number of toppings is

$C = \$1.75 + (0.75 \times P)$ or $C = \$1.75 + 0.75\,P$

or equivalent work

Part B – [1 point]

x $C = \$1.75 + (0.75 \times 2) = \$3.25$

or equivalent work

9. The table below shows the daily sales of television sets at two electronic stores, Store A and Store B, for a week.

NUMBER OF TVS
SOLD AT TWO STORES

Day	Store A	Store B
1	21	27
2	25	29
3	11	30
4	27	21
5	20	26
6	28	9
7	26	22

Part A. What is the **most** appropriate measure of center to compare the two data sets? Explain your reasoning.

Part B. Compare the two data sets using that measure of center.

Part C. Find the interquartile range for each of the two data sets. Compare the variability of the two data sets using that measure.

Use words, numbers, and/or pictures to show your work.

Scoring Instructions:

Rubric:

4 Work demonstrates a **clear and complete** understanding of the mathematical concepts and/or procedures required by the task. Appropriate strategy is shown with clear and complete explanations and interpretations.

3 Work demonstrates a **clear** understanding of the mathematical concepts and/or proced ures but is not complete. Appropriate strategy is shown, but explanation or interpretation has minor flaws.
OR
Response is incorrect because of calculation errors. Work and strategy indicate a **clear** demonstration of the problem.

2 Response demonstrates a **partial** understanding of the mathematical concepts and/or procedures. Appropriate strategy is shown, but explanation or interpretation has minor flaws.

1 Response shows **minimal** understanding of the mathematical concepts and/or procedures or provides no explanation or interpretation for the solution or shows major flaws.

0 Response is irrelevant, inappropriate, or not provided.

SCORING EXEMPLAR

Maximum Points—4

Part A – [1 point]

x

15. The number of students in a school club increased from 32 to 36. By what percent did the number of students in the club increase?

Scoring Instructions:

12.5%

OR equivalent

16. What is the result when 6 = + (F4) is subtracted from 12 = + 13 ?

Scoring Instructions:

6 =+ 17 >

or equivalent response

17. Solve the following equation using two different methods. Briefly explain both methods.

$$\frac{5}{6}(T + 3) = -0.27$$

Scoring Instructions:

Rubric:

2 Work demonstrates a **clear and complete** understanding of the mathematical concepts and/or procedures required by the task. Appropriate strategy is shown with clear and complete explanations and interpretations.

1 Response demonstrates a **partial** understanding of the mathematical concepts and/or procedures. Appropriate strategy is shown, but explanation or interpretation has minor flaws.
OR
Response is incorrect because of calculation errors. Work and strategy indicate a **clear** understanding of the mathematical concepts and/or procedures required by the task.

0 Response is irrelevant, inappropriate, or not provided.

Maximum Points—2

1 point

Student finds the correct solution using one method AND explains the method.

Sample response

Multiply both sides by 2 to eliminate the fraction. This works by the multiplication property of equality. The new equation is $T + 3 = -0.54$. Then subtract 3 from both sides to get the solution, -3.54.

1 point

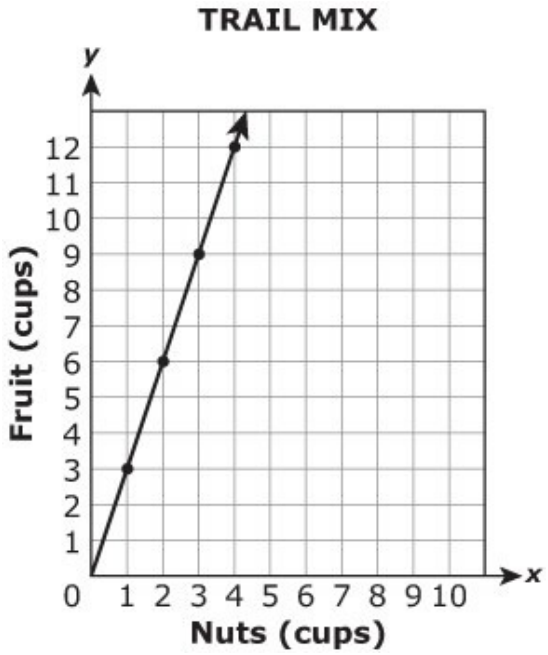
Student finds the correct solution using another (different) method AND explains the method.

Sample response

Use the distributive property to distribute the one-half to the *x* and the 3. The new equation is $0.5T + 1.5 = -0.27$. Then subtract 1.5 from both sides to get the equation $0.5T = -1.77$, and divide both sides by 0.5 to get the solution, -3.54.

or other appropriate explanations of methods that give the correct solution

19. Regina used nuts and fruits to make trail mix. The graph below shows the quantities of nuts and fruits she used for each serving.



What do the points on the graph mean in this context?

Scoring Instructions:
3 cups of fruit for every 1 cup of nuts
OR equivalent

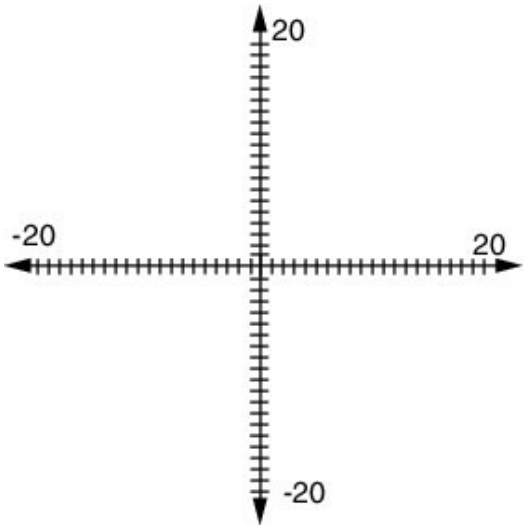
20. Aaron is going to help make pancakes for a charity breakfast. He makes the pancakes from a pancake mix. He uses 2 cups of pancake mix to make pancakes for 6 people.

Part A. If Aaron uses 5 cups of pancake mix, how many people can he feed with the pancakes he makes? Be sure to show your work.

Part B. If Aaron wants to feed 20 people, what is the minimum amount of pancake mix he will need? Be sure to show your work.

Part C. Aaron wants to feed 15 more people pancakes at the breakfast, but he has run out of pancake mix. Aaron decides to make his own pancake mix. He uses $\frac{7}{8}$ cup of flour, 3 tablespoons of sugar, and 1 tablespoon of baking powder per one cup of pancake mix. How many tablespoons of sugar does Aaron use when making the exact amount of pancake mix he needs to make pancakes for 15 people? Be sure to show your work.

Part D. Draw a graph, like the one shown below. On the graph, draw a line that represents how much sugar is needed when making homemade pancake mix for 1– 20 people. Label the axes of the graph.



Part E . Decide whether the two quantities (sugar and people) are proportional. Explain how you know by looking at the graph.

Part F. Aaron wants to make the pancakes sweeter by adding 1 tablespoon of sugar to each cup of homemade pancake mix. How does the extra sugar change the ratio of sugar to people? How does the extra sugar change the line on the graph? Are the two quantities (sugar and people) proportional? Explain your answer.

Part G. Because people liked Aaron's pancakes so much, he decides to share his recipe with the cook at his school. Aaron gives her the following recipe for 25 cups of pancake mix.

- x 18 cups flour
- x 75 tablespoons sugar
- x 30 tablespoons baking powder

Are each of the ingredients in proportion to the amount used in the recipe in part C? If not, how much of each ingredient should be in 25 cups of mix? Be sure to show your work.

Place an "X" in the answer box below.

Answer the question on the Response Document provided.

Click next.

Scoring Instructions:

Making pancakes

Teacher Directions:

Before administration, discuss with students that they can express ratios in many different forms, including A:B, $\frac{o}{»}$, or verbally by saying "A to B."

Read the problem aloud.

Instruct students to use words, numbers, equations, pictures, and/or models to show their work.

Allow 15 to 20 minutes for this task.

Guide students and answer questions, but encourage independent thinking.

This problem can be modified by changing the number of people that Aaron wants to feed and the amount of pancake mix Aaron uses and by modifying the ratios.

Suggested Materials: Paper, pencils

SCORING EXEMPLAR

Maximum Points – 8

Part A – 1 point

- Determine how many people 1 c up of pancake mix will feed by reducing the ratio given to a unit ratio. The ratio 2:6 is equivalent to the ratio 1:3.
- This means 1 cup of pancake mix feeds 3 people.
- Multiply both sides of the ratio by 5.
  The new equivalent ratio is 5:15.
- This means that 5 cups of pancake mix feed 15 people.

OR

- Since there is a proportional relationship between pancake mix and people, set up the ratio $\frac{6}{:} = \frac{9}{ë}$.
- Cross multiply to solve for *x* to determine how many people can be fed by 5 cups of pancake mix.
- 2 T= 30, T= 15

OR equivalent

Part B – 1 point

- Determine how many cups of pancake mix will feed one person by dividing all pieces of the ratio by 6.

x $\frac{6}{:} : \frac{:}{:} = \frac{5}{7} : 1$

x Multiply this new ratio by the number of people. Since $\frac{5}{7}$ cup of pancake mix feeds 1 person, $\frac{64}{7}$ cups, or $6\frac{6}{7}$ cups, will feed 20 people.

OR

x Set up the ratio $\frac{6}{:} = \frac{ë}{64}$ and solve for *x* .

x $6T = 40$

x $T = \frac{64}{7}$ or $T = 6\frac{6}{7}$

OR equivalent

Part C – 1 point

x Determine how many cups of pancake mix Aaron will need in total.

x $\frac{6}{:} = \frac{ë}{59}$ œ $6T = 30$ œ $T = 5$

OR use the information derived from solving part A.

x Multiply the number of cups Aaron needs by the number of tablespoons per cup: $5 \times 3 = 15$.

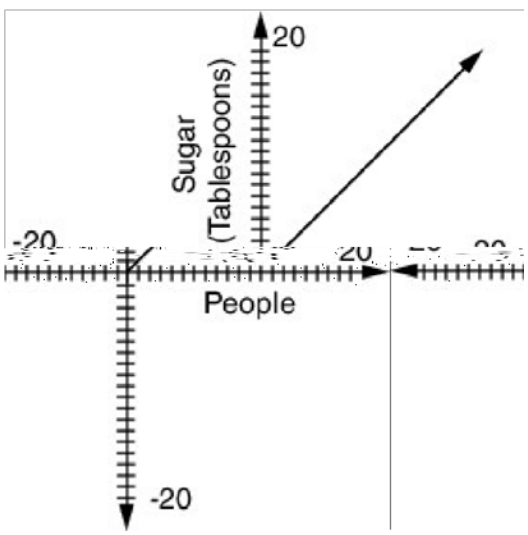
x Answer: Aaron needs 15 tablespoons of sugar.

OR equivalent

Part D – 2 points

Using the information from the previous part, we know that Aaron needs 15 tablespoons of sugar to make pancakes for 15 people.

A line with the equation U = Tshould be drawn. This line passes through the origin and has a slope of 1.



OR equivalent

OR a correct answer based on an incorrect answer from Part C

Part E—1 point

- They are proportional. The graph shows a straight line that passes through the origin.

or a correct answer based on an incorrect answer from Part D
OR equivalent

Part F—1 point

- Since Aaron used 5 cups of pancake mix originally, he used 15 tablespoons of sugar. With the new recipe, Aaron uses 4 tablespoons of sugar per cup. Therefore, he uses a total of 20 tablespoons of sugar to make pancakes for 15 people.
- This changes the ratio of sugar to people from 3:3 to 4:3. The new equation for the line is $U = \frac{8}{7}T$. This new line has a steeper slope, but it is still straight and it still passes through the origin. The relationship is still proportional.

OR equivalent

Part G—1 point

- Flour is not proportional; the recipe should have $\frac{7}{8} \times 25 = 18.75$ cups of flour.
- $3 \times 25 = 75$; Sugar is proportional
- Baking powder is not proportional; the recipe should have 25 tablespoons of baking powder.

OR equivalent
OR a correct answer based on an incorrect answer from Part C