

4. Simplify.

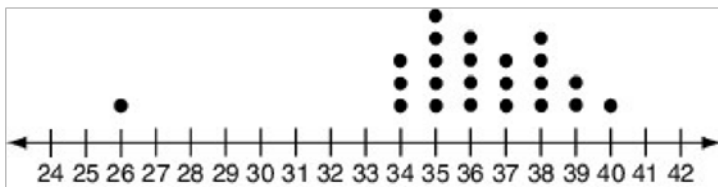
$$4a + 2 - 3c + 6 + 7c - 3 - 3b + 2a - 5b$$

Scoring Instructions:

$$6a - 8b + 4c + 5$$

or other correct answers (terms could be in any order)

7. Every student in a classroom received a box of raisins. The students counted the number of raisins in each box and recorded their number on the dot plot shown below.



Part A. List the values needed to construct a box plot to represent the data collected by the class in the dot plot.

Part B. Which part(s) of the box plot in Part A will change if the data point at 26 is removed? Show or explain how you got your answer.

Scoring Instructions:

Data 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 procedures 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 – (3 points)

- The minimum value is 26.
- The maximum value is 40.
- Quartile 1 begins at 35.
- Quartile 3 begins at 38.
- The median is 36.

Part B – (1 point)

- The minimum will be the only part of the box plot to change.

8. Brendan has six less than five times the number of pencils that Riley has. Let p represent the number of pencils Riley has. Write an algebraic expression that represents the number of pencils Brendan has in terms of p , the number of pencils that Riley has.

Scoring Instructions:

$$5p - 6$$

OR other equivalent expression

12. Point X is located at coordinates $(-2, -1)$. What are the coordinates of a point located 9 units away from X ?

Scoring Instructions:

There are many possible correct answers. Some of the more common may be:

$(-11, -1)$

or

$(7, -1)$

or

$(-2, 8)$

or

$(-2, -10)$

or any other point that would be 9 units from point X

(satisfies $(x + 2)^2 + (y + 1)^2 = 81$)

13. Consider the expression below.

$$t = (-2)^a$$

Create a table with values of t for integer values of a from 1 to 10, showing the appropriate exponent form and numeric value. An example of the table with the first column completed is shown below.

a	1	2	3	4	5	6	7	8	9	10
t (exponent form)	$(-2)^1$									
t (numeric value)	-2									

Place an "X" in the answer box below.

Answer the question on the Response Document provided.

Click next

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]

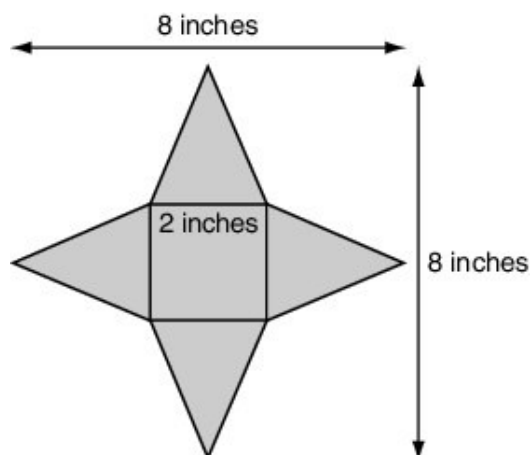
Correct exponent form (see below)

[1 point]

Correct numeric value (see below)

<i>a</i>	1	2	3	4	5	6	7	8	9	10
<i>t</i> (exponent form)	$(-2)^1$	$(-2)^2$	$(-2)^3$	$(-2)^4$	$(-2)^5$	$(-2)^6$	$(-2)^7$	$(-2)^8$	$(-2)^9$	$(-2)^{10}$
<i>t</i> (numeric value)	-2	4	-8	16	-32	64	-128	256	-512	1024

14. A four-pointed star is created with four congruent isosceles triangles and a square, as shown below.



If the width of the base of each point of the star is 2 inches, what is the area, in square inches, of the star?

Scoring Instructions:

16

OR equivalent response

16. Ashley needs new batteries for the flashlights at her house. Each flashlight takes 4 batteries. Write an equation to show how the number of batteries needed, b , depends on the number of flashlights, f .

Scoring Instructions:

$$b = 4f$$

OR equivalent

21. Aaron's wrestling coach placed him in the lowest weight class. All the wrestlers in this weight class weigh under 70 pounds. If w stands for Aaron's weight, write an inequality that **best** represents his current weight.

Scoring Instructions:

$$w < 70$$

OR

$$70 > w$$

22. Stephanie is making trail mix with her mom. The recipe is shown below.



The only measuring cup they have available is a $\frac{1}{4}$ cup.

Part A. Rewrite the recipe to show how many $\frac{1}{4}$ cups will be needed to complete the recipe. Show and explain your work.

Part B. They didn't have enough nuts, so they only made half of a batch of the mix. Stephanie is putting the trail mix into baggies to make snacks for school. If she puts $\frac{2}{3}$ cup into each bag, will there be enough for Stephanie to have one snack bag for a full 5-day school week? Explain why or why not.

Part C. Describe one other situation with a recipe when you might need to multiply or divide the ingredients in a recipe.

Place an "X" in the answer box below.

Answer the question on the Response Document provided.

Click next.

Scoring Instructions:

Teacher Instructions

Teacher Directions:

Students will be required to compute quotients of fractions and divide fractions by other fractions. They will apply problem-solving strategies to use these mathematical skills in real-

life situations. Students may want to use measuring cups to help them better visualize the recipe.

Review with students the procedures for dividing a fraction by another fraction.

Allow 10 to 15 minutes for the task.

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

Suggested Materials: Paper, pencils, measuring cups (optional)

SCORING EXEMPLAR

Maximum Points—8

Part A – 6 points (one point for each correct recipe amount)

- Shown below is an example of what the recipe would look like measured in fourths:
- 8 fourth cups dried apples
- 3 fourth cups dried cranberries
- 6 fourth cups sunflower seeds
- 8 fourth cups nuts
- 2 fourth cups chocolate chips
- 5 fourth cups pretzels

or equivalent work

Part B – 1 point

- Yes, there will be enough for Stephanie to make 5 bags (one for each day of the school week). There will be enough for 6 bags.

$$\frac{4}{1} \div \frac{2}{3} = \frac{12}{2} = 6$$

Or equivalent work

Part C – 1 point

- One situation where a recipe might need to be multiplied is if you needed more servings and needed to double or triple the recipe.

OR

- A recipe might make too much and you need to reduce the recipe by a half or fourth

or equivalent work