

Colorado Measures of Academic Success



Grade 7 Mathematics

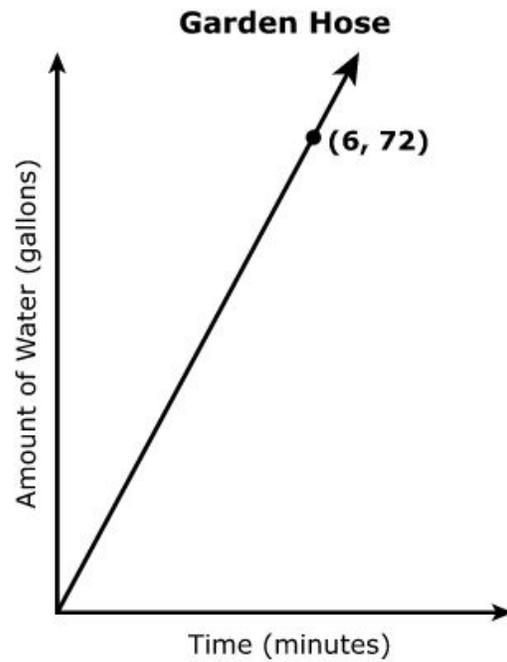
Answer Key with Scoring Rubrics

Practice Resource for Students

ANSWER KEY: ITEM SET 1

Item Set 1 - Question 1 (Selected Response)

The graph represents the amount of water, in gallons, y , that flows through a garden hose in x minutes.



Which statement correctly describes the meaning of the point shown on this graph?

- A. Every 6 minutes, 72 gallons of water flow through the hose.
- B. Every 72 minutes, 6 gallons of water flow through the hose.
- C. Every 6 minutes, 12 gallons of water flow through the hose.
- D. Every 12 minutes, 6 gallons of water flow through the hose.

| Item Information | | |
|------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Answer: | A | |
| Colorado Academic Standards (CAS) Evidence Outcomes: | 7.RP.A.2.d | Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate. |
| Evidence Statement: | 7.RP.2d | Recognize and represent proportional relationships between quantities. d. Explain what a point (x, y) on the graph of a proportional relationships means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate. i) Tasks require students to interpret a point (x, y) on the graph of a proportional relationship in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate. For the explanation aspect of standard 7.RP.2d, see 7.C.6.1. ii) Tasks will include proportional relationships that only involve positive numbers. |
| Subclaim: | A - Major Content | The student solves problems involving the Major Content for her grade/course with connections to the Standards for Mathematical Practice. |
| P Value: | 0.638 | |

Item Set 1 - Question 2 (Selected Response)

A student spent \$18 for a haircut this week.

Which event, when combined with the student spending \$18, will result in the student having \$0 remaining?

- A. The student earned \$18 for cleaning out his neighbor's garage.
- B. The student paid his little brother \$18 for doing his chores.
- C. The student purchased a gift for his mom for \$18.
- D. The student gave \$18 to a friend.

| Item Information | | |
|------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Answer: | A | |
| Colorado Academic Standards (CAS) Evidence Outcomes: | 7.NS.A.1.a | Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. |
| Evidence Statement: | 7.NS.1a | 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. a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. i) Tasks require students to recognize or identify situations of the kind described in standard 7.NS.1a. |
| Subclaim: | A - Major Content | The student solves problems involving the Major Content for her grade/course with connections to the Standards for Mathematical Practice. |
| P Value: | 0.62 | |

Item Set 1 - Question 3 (Selected Response)

A person paid a total of \$38.50, before tax, for flowers and dirt at a store. The price of the flowers was \$4.50 per container. The price of the dirt was \$7.00 per bag.

If the customer bought one bag of dirt, how many containers of flowers did the customer buy?

- A. 5
- B. 7
- C. 9
- D. 10

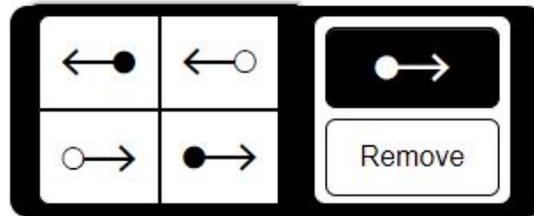
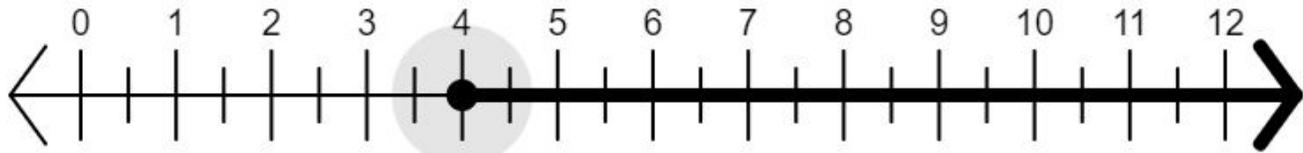
| Item Information | | |
|---------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Answer: | B | |
| Colorado Academic Standards (CAS) Evidence Outcomes: | 7.EE.B.4.a | Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? |
| Evidence Statement: | 7.EE.4a-1 | Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. i) Comparison of an algebraic solution to an arithmetic solution is not assessed here; for this aspect of standard 7.EE.4a, see 7.C.5. |
| Subclaim: | A - Major Content | The student solves problems involving the Major Content for her grade/course with connections to the Standards for Mathematical Practice. |
| P Value: | 0.663 | |

Item Set 1 - Question 4 (TEI Number Line)

A student wants to walk 30 or more total miles this month and has already walked 18 of the 30 total miles. The student walks at a constant speed of 3 miles per hour.

Graph n , all the possible values for the number of additional hours it will take the student to walk at least 30 total miles this month.

Select a ray. Drag the point on the ray to the appropriate location on the number line.



| Item Information | | |
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| Answer: | See Image | |
| Colorado Academic Standards (CAS) Evidence Outcomes: | 7.EE.B.4.b | Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions. |
| Evidence Statement: | 7.EE.4b | Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems by reasoning about the quantities. b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions. i) Tasks may involve $<$, $>$, \leq or \geq . |
| Subclaim: | A - Major Content | The student solves problems involving the Major Content for her grade/course with connections to the Standards for Mathematical Practice. |
| P Value: | Not Available | |

Item Set 1 - Question 5 (TEI Line Graph, Constructed Response)

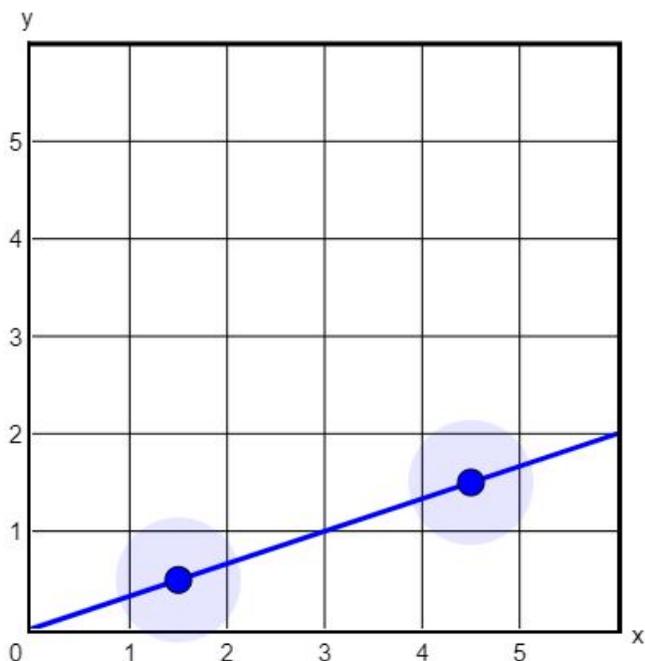
The table shows a proportional relationship between x and y .

| x | y |
|-----|-----|
| 1.5 | 0.5 |
| 4.5 | 1.5 |

Part A

Plot the relationship between x and y .

To graph a line, select two points on the coordinate plane. A line will be drawn through the points.



Part B

- Use the graph to explain how the relationship between x and y is proportional.
- Explain or show mathematically how $(11.25, 3.75)$ is a point on the graph, using the constant of proportionality.

Enter your explanations and your work in the space provided.

| Item Information | | |
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| Answer: | See Scoring Rubric and Sample Student Responses | |
| Colorado Academic Standards (CAS) Evidence Outcomes: | 7.RP.A.2.a | Determine whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. |
| | 7.RP.A.2.b | Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. |
| Evidence Statement: | 7.C.4 | Base explanations/reasoning on a coordinate plane diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in 7.RP.A. i) Tasks will include proportional relationships that only involve positive numbers. |
| Subclaim: | C - Expressing Mathematical Reasoning | The student expresses grade/course-level appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others, and/or attending to precision when making mathematical statements. |
| Score Point Distribution: | 2.0% of students earned 3 points. 15.0% of students earned 2 points. 41.4% of students earned 1 point. 41.7% of students earned 0 points. | |

| Scoring Rubric – Part A (Machine Scored) | |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Points | Attributes |
| 1 | Computation Component: Student plots the points (1.5,0.5) and (4.5,1.5) or any two points which pass through the line $y = \frac{1}{3}x$ on the coordinate plane. |
| 0 | Student response is incorrect or irrelevant. |

| Scoring Rubric – Part B | |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Points | Attributes |
| 2 | Student response includes each of the following 2 elements. <ul style="list-style-type: none"> Reasoning component: Valid explanation for determining if a relationship is proportional by using the graph of the relationship. Reasoning component: Valid explanation by using the constant of proportionality to explain or show how (11.25,3.75) is a point on the graph. |
| 1 | Student response includes 1 of the 2 elements. |
| 0 | Student response is incorrect or irrelevant. |
| Sample Student Response: | This graph shows this is proportional because for every $1\frac{1}{2}$ units on the x axis you go, the line always goes up $\frac{1}{2}$ units on the y axis. This graph also proves this is proportional because the line goes through the point 0,0. I know that the constant of proportionality is $\frac{1}{3}$ because $.5 \div 1.5 = \frac{1}{3}$ and to check this you can do $4.5 \times \frac{1}{3}$ and it does equal 1.5. Then, using the constant you can make the equation $y = \frac{1}{3}x$ and then plug the point 11.25,3.75 in and if the equation is still correct then that proves these are points on that graph. When you do that you find that 3.75 does equal $\frac{1}{3} \times 11.24$ which proves this is a point on the graph. |

| | |
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| <p>Annotation for Sample Student Response:</p> | <p>Score Point 2 The response receives full credit. It includes each of the 2 required elements.</p> <p>Reasoning Component:</p> <ul style="list-style-type: none"> • Student Response: This graph shows this is proportional because for every $1\frac{1}{2}$ units on the x axis you go, the line always goes up $\frac{1}{2}$ units on the y axis. This graph also proves this is proportional because the line goes through the point 0,0. <ul style="list-style-type: none"> ○ Rationale for Score: The student provides a valid explanation for determined if the relationship is proportional because the graph is linear (for every $1\frac{1}{2}$ units on the x axis you go, the line always goes up $\frac{1}{2}$ units on the y axis) and passes through the origin (the line goes through the point 0,0). <p>Reasoning Component:</p> <ul style="list-style-type: none"> • Student Response: I know that the constant of proportionality is $\frac{1}{3}$ because $.5 \div 1.5 = \frac{1}{3}$ and to check this you can do $4.5 \times \frac{1}{3}$ and it does equal 1.5. Then, using the constant you can make the equation $y = \frac{1}{3}x$ and then plug the point 11.25,3.75 in and if the equation is still correct then that proves these are points on that graph. When you do that you find that 3.75 does equal $\frac{1}{3} \times 11.24$ which proves this is a point on the graph. <ul style="list-style-type: none"> ○ Rationale for score: The student provides a valid explanation that uses the constant of proportionality to show that (11.25,3.75) is a point on the graph (constant of proportionality is $\frac{1}{3}$ because $.5 \div 1.5 = \frac{1}{3}$ and to check this you can do $4.5 \times \frac{1}{3}$ and it does equal 1.5. Then, using the constant you can make the equation $y = \frac{1}{3}x$ and then plug the point 11.25,3.75 in . . . 3.75 does equal $\frac{1}{3} \times 11.24$ which proves this is a point on the graph). <p>Note: Sample student responses are not representative of all correct answers for an item and are only provided as a guide to assist teachers with scoring.</p> |
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Item Set 1 - Question 6 (Selected Response)

A person can play $\frac{1}{6}$ of a song in $\frac{1}{3}$ of a minute.

How many minutes does it take the person to play the whole song once at this rate?

- A. 3
- B. 2
- C. $\frac{2}{3}$
- D. $\frac{1}{2}$

| Item Information | | |
|---------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Answer: | B | |
| Colorado Academic Standards (CAS) Evidence Outcomes: | 7.RP.A.1 | Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{1}{2} \div \frac{1}{4}$ miles per hour, equivalently 2 miles per hour. |
| Evidence Statement: | 7.RP.1 | Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{1}{2}/\frac{1}{4}$ miles per hour, equivalently 2 miles per hour. i) Tasks have a real-world context. ii) An example of like units would be cups of butter to cups of sugar; an example of different units would be miles to hours. Unit conversion is not assessed here. |
| Subclaim: | A - Major Content | The student solves problems involving the Major Content for her grade/course with connections to the Standards for Mathematical Practice. |
| P Value: | 0.62 | |

Item Set 1 - Question 7 (Selected Response, Selected Response)

A reporter from the school paper asks a random sample of students about their favorite school food. The results are shown in the table. There are 441 students in total at the school.

| Favorite School Food | Number of Students |
|-----------------------------|---------------------------|
| spaghetti | 12 |
| salad | 15 |
| hamburger | 11 |
| pizza | 20 |
| other | 5 |

Part A

Based on the sample, approximately how many students in the entire school population prefer spaghetti as their favorite school food?

- A. 12
- B. 63
- C. 84
- D. 105

Part B

Based on the sample, which inference can be made?

- A. The number of students who like spaghetti is approximately the same as the number who like hamburgers.
- B. A small number of students bring their own lunch to school.
- C. Most students eat salad or pizza every day.
- D. Almost the whole school prefers pizza.

| Item Information | | |
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| Answer: | Part A = C, Part B = A | |
| Colorado Academic Standards (CAS) Evidence Outcomes: | 7.SP.A.2 | Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be. |
| Evidence Statement: | 7.SP.2 | Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be. |
| Subclaim: | B - Supporting Content | The student solves problems involving the Additional and Supporting Content for her grade/course with connections to the Standards for Mathematical Practice. |
| P Value: | 0.326 | |

Item Set 1 - Question 8 (Selected Response)

A teacher has an equal number of pink, blue, green, yellow, and purple erasers in a box. She will randomly distribute 1 eraser from the box to each student.

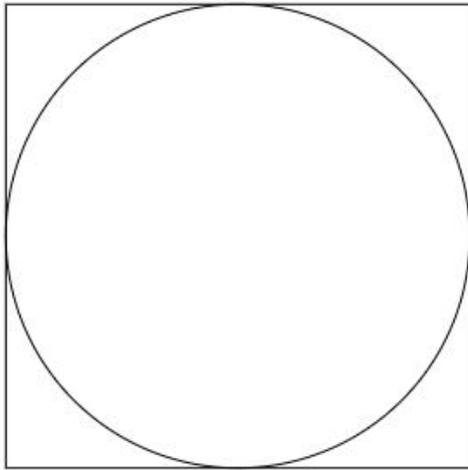
What is the probability that the first eraser that will be distributed is a color other than yellow?

- A. $\frac{1}{5}$
- B. $\frac{1}{4}$
- C. $\frac{3}{4}$
- D. $\frac{4}{5}$

| Item Information | | |
|------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Answer: | D | |
| Colorado Academic Standards (CAS) Evidence Outcomes: | 7.SP.C.7.a | Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected. |
| Evidence Statement: | 7.SP.7a | Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected. i) Simple events only. |
| Subclaim: | B - Supporting Content | The student solves problems involving the Additional and Supporting Content for her grade/course with connections to the Standards for Mathematical Practice. |
| P Value: | 0.407 | |

Item Set 1 - Question 9 (Fill in the Blank, Selected Response)

A circle is inscribed on a square piece of paper. The radius of the circle is 5 centimeters.



Part A

What is the circumference, in centimeters, of the circle?

Enter your answer in the space provided. Enter **only** your answer.

10 π centimeters

| | | | | | | |
|--|-------|----------------|-------------------|--------|---------------------------|---------------------------|
| | + | - | \times | \div | $\frac{\square}{\square}$ | $\frac{\square}{\square}$ |
| | y^x | $\sqrt{\quad}$ | $\sqrt[3]{\quad}$ | = | (.) | % |
| | | | | | | |

Part B

The circle is cut out and removed from the square. How much paper, in square centimeters, remains after the circle is removed?

- A. $25\pi - 10$
- B. $10\pi - 25$
- C. $100 - (10\pi)$
- D. $100 - (25\pi)$

| Item Information | | |
|------------------------------------------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Answer: | Part A = See Rubric, Part B = D | |
| Colorado Academic Standards (CAS) Evidence Outcomes: | 7.G.B.4 | Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. |
| Evidence Statement: | 7.G.4-1 | Know the formulas for the area and circumference of a circle and use them to solve problems. i) Pool should contain tasks with and without context. ii) Tasks may require answers to be written in terms of π . |
| Subclaim: | B - Supporting Content | The student solves problems involving the Additional and Supporting Content for her grade/course with connections to the Standards for Mathematical Practice. |
| P Value: | 0.242 | |

| Scoring Rubric – Part A | |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Points | Attributes |
| 1 | Student response is a fraction or decimal value within the range of possible values: 31.40 to 31.43 inclusive or exactly 10π . |
| 0 | Student response is incorrect or irrelevant. |

Item Set 1 - Question 10 (Constructed Response)

A person is planning an event and wants to order chicken and beans from a store.

- The store charges \$9.49 per pound of chicken and \$5.75 for one quart of beans.
- The person has \$70 to purchase the chicken and the beans.

Let p represent the number of pounds of chicken.

- Create an equation that can determine the maximum amount of chicken, in pounds, that can be purchased, along with one quart of beans, using the \$70. Do not include tax.
- Solve the equation to determine the maximum amount of chicken that can be purchased. Round your final answer to the nearest quarter pound. Show your work.

Enter your equation, your solution, and your work in the space provided.

Equation: $9.49p + 5.75 = 70$

Maximum amount of chicken: $6\frac{3}{4}$ pounds

Your Work:

$$70 - 5.75 = 64.25$$

$$64.25 \div 9.49 = p$$

$$p = 6\frac{3}{4}$$

| Item Information | | |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Answer: | See Scoring Rubric and Sample Student Responses | |
| Colorado Academic Standards (CAS) Evidence Outcomes: | 7.EE.B.4.a | Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? |
| | 7.EE.B.3 | Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation. |
| Evidence Statement: | 7.D.1 | Solve multi-step contextual word problems with degree of difficulty appropriate to grade 7, requiring application of knowledge and skills articulated in Type I, Sub-Claim A Evidence Statements. i) Tasks may have scaffolding if necessary in order to yield a degree of difficulty appropriate to grade 7. ii) Tasks involving writing or solving an equation should not go beyond the equation types described in 7.EE.4a. ($px + q = r$ and $p(x + q) = r$ where p , q , and r are specific rational numbers.) |
| Subclaim: | D - Modeling and Application | The student solves real-world problems with a degree of difficulty appropriate to the grade/course by applying knowledge and skills articulated in the standards for the current grade/course (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them (MP. 1), reasoning abstractly and quantitatively (MP. 2), using appropriate tools strategically (MP.5), looking for and making use of structure (MP.7), and/or looking for and expressing regularity in repeated reasoning (MP.8). |
| Score Point Distribution: | 5.0% of students earned 3 points. 11.7% of students earned 2 points. 15.0% of students earned 1 point. 68.3% of students earned 0 points. | |

| Scoring Rubric | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Points | Attributes |
| 3 | <p>Student response includes each of the following 3 elements.</p> <ul style="list-style-type: none"> • Modeling component: Valid equation equivalent to $9.49p + 5.75 = 70$. • Computation component: Correct pounds of chicken that can be purchased, rounded to the nearest quarter pound, 6.75. • Modeling component: Valid work to solve the given equation and determine the maximum amount of chicken, in pounds, that can be purchased. |
| 2 | Student response includes 2 of the 3 elements. |
| 1 | Student response includes 1 of the 3 elements. |
| 0 | Student response is incorrect or irrelevant. |
| Sample Student Response: | <p>Equation: $9.49p + 5.75 = 70$</p> <p>Maximum amount of chicken: 6 and $\frac{3}{4}$ pounds</p> <p>Your Work: $70 - 5.75 = 64.25$ $64.25 \div 9.49 = p$ $p = 6$ and $\frac{3}{4}$</p> |
| Annotation for Sample Student Response: | <p>Score Point 3</p> <p>The response receives full credit. It includes each of the 3 required elements.</p> <p>Modeling Component:</p> <ul style="list-style-type: none"> • Student Response: Equation: $9.49p + 5.75 = 70$. <ul style="list-style-type: none"> ○ Rationale for Score: The student provides a valid equation that determines the maximum amount of chicken, in pounds, that can be purchased, along with one quart of beans, using 70 dollars ($9.49p + 5.75 = 70$). The variable, p, is used to represent the number of pounds that can be purchased. Note that variable substitution is allowed. <p>Computation Component:</p> <ul style="list-style-type: none"> • Student Response: Maximum amount of chicken: 6 and $\frac{3}{4}$ pounds <ul style="list-style-type: none"> ○ Rationale for score: The correct pounds of chicken, rounded to the nearest quarter pound, is provided (6 and $\frac{3}{4}$). <p>Modeling Component:</p> <ul style="list-style-type: none"> • Student Response: Your Work: $70 - 5.75 = 64.25$, $64.25 \div 9.49 = p$, $p = 6$ and $\frac{3}{4}$ <ul style="list-style-type: none"> ○ Rationale for score: The student provides valid work for how to solve the equation to determine the maximum pounds of chicken that can be purchased ($70 - 5.75 = 64.25$, $64.25 \div 9.49 = p$, $p = 6$ and $\frac{3}{4}$). <p>Note: The equation must have one variable and at least one operation.</p> <p>Note: Equation should not include tax.</p> <p>Note: Variable substitution is allowed.</p> <p>Note: Sample student responses are not representative of all correct answers for an item and are only provided as a guide to assist teachers with scoring.</p> |