

Item#	Rationale	
1	Option A is correct	To determine each y-value in the table,

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2	Option is correct	<p>To determine how much Rebecca paid for the filters, the student should have used the order of operations, PEMDAS. The student should have completed the operations in this order: 1) Operations contained in Parentheses, brackets, Exponents (numbers raised to a power), 2) Multiplication/Division from left to right, and 3) Addition/Subtraction from left to right. First, the student should have performed the multiplication step within the parentheses (8×16.95), resulting in 135.60. Then, the student should have subtracted 7.50 from 135.60, resulting in \$128.10.</p>
	Option is incorrect	<p>The student likely performed the operations in the correct order but made a computation error when performing the multiplication step by not grouping each step, resulting in 88.20. The student likely subtracted 7.50 from 88.20 correctly $(88.20 - 7.50 = 80.70)$. The student needs to focus on</p>
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5	Options correct	To determine the correct expression (combination of numbers and operation symbols $(+, -, \times, \div)$) grouped together show

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6	0.6 and 6 tenths are equivalent values are correct	To round to the tenths place, the student should have determined that the digit in the tenths place (first digit to the right of the decimal point) is 6. The student should have then looked at the digit to the right of 6 (0.64) and compared it to 5. Because 4 is less than 5, the digit 6 is not increased. The answer is 0.6.



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9	Option C is correct	<p>To determine how much syrup 6 gallons was used in each cherry snow cone, the student should have interpreted the same amount of syrup as one $\frac{1}{6}$ of the total amount. The student could have determined that to divide $\frac{1}{4}$ by the number 6, first she should consider a fraction with a denominator (bottom number) of 4. To divide $\frac{1}{4}$ by 6, she should multiply the numerator (top number) by 6, resulting in $\frac{6}{4}$.</p>

Item#	Rationale	
10	Option A is correct	To determine which statement is true about Cheyenne's weekly income, the students should have first determined that the weekly gross income (income before paying taxes) is $\$8 \times 15 = \120 . Then the students should have realized that the weekly net income (income after paying taxes) would be less than the weekly gross income of \$120.
	Option B is incorrect	The student likely confused the definitions of gross income and net income and did not understand that the given information could be used only to calculate Cheyenne's weekly gross income. The student needs to focus on understanding the difference between gross income and net income.
	Option C is incorrect	The student likely confused the definitions of gross income and net income. The student needs to focus on understanding the difference between gross income and net income.
	Option D is incorrect	The student likely misunderstood that the given information could be used only to calculate Cheyenne's weekly gross income and thought the \$120 represented the weekly net income. The student likely determined that the gross income would be greater than the net income. The student needs to focus on understanding that the gross income can be calculated by multiplying the number of hours worked by the hourly rate of earnings.

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11	Options Correct	<p>To determine the distance in kilometers Nathamode's bike (n) the students should have first determined the distance in kilometers that Philipode's bike took the students should have subtracted 2 from the number of kilometers Christine rode (27) because Philipode 2 kilometers less than Christine. Since Nathamode's bike is 3 times as far as Philipode's the students should have</p> <p style="text-align: center;">-</p>
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Item#	Rationale	
13	Option B correct	<p>To determine the number of kilometers the Diomid during 28 days, the student should have multiplied 3.75 by 28 ($3.75 \times 28 = 105$). The student should have determined that multiplying 375 (3.75 without the decimal point) by 28 results in an answer of 10,500. To determine the placement of the decimal point, the student should have added the number of digits to the right of the decimal point in 3.75 (two) and 28 (zero) and then counted that total number of digits (two) from the right of 10,500 to place the decimal point in the answer (105 km).</p>
	Option A incorrect	<p>The student likely calculated the correct product (answer) 375 and 28 but miscounted the total number of digits to the right of the decimal point in the given numbers to three instead of two and then counted three digits from the right of 10,500 to place the decimal point in the answer. The student needs to focus on understanding where to place the decimal point in the product when multiplying decimal numbers.</p>
	Option C incorrect	<p>The student likely misinterpreted the number of days as the number of school days in a typical week (5) and then calculated the correct product (answer) 375 and 5. The student likely did not count the total number of digits to the right of the decimal point in 3.75 and 5. To determine how far to move the decimal point in the answer, the student needs to focus on attending to the details of the question when solving problems involving multiplication of decimal numbers.</p>
	Option D incorrect	<p>The student likely misinterpreted the number of days as the number of school days in a typical week (5) and then calculated the correct product (answer) 375 and 5. The student likely counted the total number of digits to the right of the decimal point in 3.75 and 5. To determine how far to move the decimal point in the answer, the student needs to focus on attending to the details of the question and understanding where to place the decimal point in the product when solving problems involving multiplication of decimal numbers.</p>

Item#	Rationale	
14	Options correct	<p>To determine the position Juan's suitcase would be if the weights of the suitcases in pounds were ordered from greatest to least, the student should have compared the digits in each place value in each weight. Since all four weights have the digit 2 in the tens place (leftmost digit), the student should have compared the digits in the ones place (digit to the left of the decimal point) in each weight. The weights of Juan's suitcase and Kimberly's suitcase have a smaller value in the ones place (0 and 2, respectively) than the other two weights (6 and 8). Since 0 < 2, the weight of Juan's suitcase should be the least, and the weight of Kimberly's suitcase should be the second least. The weights of the other two suitcases are 64.92 and 84.2. Since 6 < 8, the weight of the suitcase that weighs 64.92 pounds should be the third least, and the weight of the suitcase that weighs 84.2 pounds should be the greatest.</p>

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17	Option D correct	To determine which equation is represented by the model, the student should have interpreted that the 72 shaded squares represent a value of 0.72 that the outline sections represent dividing the 0.72 into 9 groups and that the shaded squares in each group represent a value of 0.08. Therefore, the model represents the equation $0.72 \div 9 = 0.08$.
	Option A incorrect	The student likely miscounted the number of squares in each group as 9 instead of 8 and though the value of the shaded squares in each group was 0.09 instead of 0.08. The student needs to focus on understanding how to represent quotient (answers) of decimals using pictorial models.
	Option B incorrect	The student likely miscounted the number of squares in each group as 8 instead of 9. The student needs to focus on carefully examining given pictorial models to determine the quotient (answer) of decimals that the model represents.
	Option C incorrect	The student likely thought the shaded squares in each group were equal to 0.1 instead of 0.08. The student needs to focus on understanding how to represent quotient (answers) of decimals using pictorial models.

Item#	Rationale	
18	Options correct	

Item#	Rationale	
19	Option C Correct	To determine how many liters of liquid soap remained in the bottle, the student could have first determined how much of the liter of soap was put into the two containers by adding 0.475 liter to 0.35 liter, resulting in 0.825 liter. Then the student could have subtracted this amount from the amount of liquid soap in the full bottle (2 liters), resulting in 1.175 liters. The student also could have subtracted the amount of soap in each container from the amount of soap in the full bottle in two separate steps ($2 - 0.475 = 1.525$, $1.525 - 0.35 = 1.175$). These are efficient ways to solve the problem; however, the methods could be used to solve the problem correctly.
	Option A Incorrect	The student likely determined the total amount of liquid soap that was put into the two containers ($0.475 + 0.35 = 0.825$) but did not perform any additional steps. The student needs to focus on understanding problem situations and the mathematical operations ($+$, $-$, \times , \div) needed to solve them.
	Option B Incorrect	The student likely determined the total amount of liquid soap that was put into the two containers ($0.475 + 0.35 = 0.825$) but subtracted 0.2 liters from 0.825 liters instead of subtracting 0.825 liters from 2 liters ($0.825 - 0.2 = 0.625$). The student needs to focus on how to write a whole number as a decimal number.
	Option D Incorrect	The student likely aligned the numbers 0.475 and 0.35 on their rightmost digits. 393.98162235 The 2 (digit 393.98164) (The TD <</MCID4rnumber)]T

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20	Option C is correct	To determine the difference between the number of students who did more than 36 sit-ups and the number of students who did fewer than 25 sit-ups, the students should have analyzed the stem and leaf plot looking for values greater than 36 and less than 25. Using the key 2 means 2 to interpret the meaning of the stems and leaves, the students should have determined that there are 2 values on the stem and leaf plot that are greater than 36 (37, 44) and 7 values on the stem and leaf plot that are less than 25 (17, 50, 53, 62, 67, 69, 70).

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23	Option B correct	<p>To determine how many milliliters of orange juice Kristin drinks during the 15 days, the student could have first multiplied 0.5 liter by 15 to determine that Kristin drinks 7.5 liters of orange juice in 15 days ($0.5 \times 15 = 7.5$). Then the student should have referred to the units shown in the volume and Capacity section of the STAAR Grade 5 Mathematics Reference Material page within the student test booklet, finding that 1 liter (L) = 1,000 milliliters (mL). The student should have multiplied the number of milliliters of orange juice Kristin drinks in 15 days (7.5) by the conversion factor (1,000), resulting in 7,500 milliliters. The student could also have multiplied 0.5 liter by the conversion factor 1,000 first and then multiplied the result by 15 days ($0.5 \times 1,000 = 500$ and $500 \times 15 = 7,500$).</p>
	Option A incorrect	<p>The student likely misunderstood the given information, thinking that 15 was the total number of liters of orange juice Kristin drinks and multiplied 15 by the conversion factor of 1,000, resulting in 15,000. The student needs to focus on understanding problem situations and the mathematical operations (+, -, x, ÷) needed to solve them.</p>
	Option C incorrect	<p>The student likely calculated the number of liters of orange juice Kristin drinks in 15 days but multiplied the number of liters by 100 instead of 1,000, calculating $7.5 \times 100 = 750$. The student needs to focus on understanding that a volume given in liters should be multiplied by 1,000 to get the equivalent volume in milliliters.</p>
	Option D incorrect	<p>The student likely calculated the number of liters of juice Kristin drinks on one day by calculating $0.5 \times 1,000 = 500$. The student needs to focus on understanding problem situations and the mathematical operations (+, -, x, ÷) needed to solve them.</p>

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24	Option A is correct	<p>To determine which equation based on the fraction of the whole cake each friend will receive, the student should have recognized that the model shaded shows the fraction $\frac{1}{2}$ divided into 3 parts and each shaded part represents $\frac{1}{6}$ of the entire cake. Therefore, the model shaded to represent the equation $\frac{1}{2} \div 3 = \frac{1}{6}$.</p>
	Option B is incorrect	<p>The student likely identified that the model showed 3 shaded parts and the total part of the model that is shaded is $\frac{1}{2}$ but confused the operation being represented in the problem as multiplication instead of division. The student needs to focus on understanding how to represent division of a unit fraction by a whole number using pictorial model.</p>
	Option C is incorrect	<p>The student likely identified that the model showed 3 equal parts and that the total part of the model that is shaded is $\frac{1}{2}$. Then the student likely confused the operation being represented in the problem as multiplication instead of division. The student needs to focus on understanding how to represent division of a unit fraction by a whole number using pictorial model.</p>
	Option D is incorrect	<p>The student likely identified that the total part of the model that is shaded is $\frac{1}{2}$ and that division would be used to solve the given problem situation but identified an equation that included the total number of parts in the model (6) instead of the number of parts to which the shaded area was divided (3). The student needs to focus on understanding how to represent division of a unit fraction by a whole number using pictorial model.</p>

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25	Options Correct	To -
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Item#	Rationale	
27	<p>Option B correct</p>	<p>The student should have determined that the graph with points located at $(1\frac{1}{2}, 1)$, $(2\frac{1}{2}, 2)$, $(3\frac{1}{2}, 3)$, $(5, 5)$, and $(6, 6)$ best represents the ordered pairs in the table. The student should have determined that the x-value (presented at the top of the table) represents the horizontal distance to the right from zero and the y-value (presented at the bottom of the table) represents the vertical distance up from there.</p>
	<p>Option A incorrect</p>	<p>The student likely reversed the x-values and y-values and identified the graph with points located at $(1\frac{1}{2}, 1)$, $(2, 2)$, $(3, 3)$, $(5, 5)$, and $(6, 6)$. The student needs to focus understanding how to graph points on the coordinate plane with accuracy.</p>
	<p>Option C incorrect</p>	<p>The student likely identified the graph with the first three sets of x- and y-values graphed and assumed that the x-values of the points on the graph were 1, 2, 3, 4, and 5 instead of 1, 2, 3, 5, and 6. The student needs to focus on graphing ordered pairs of numbers found in input-output table.</p>
	<p>Option D incorrect</p>	<p>The student likely reversed the x-values and y-values in the table and thought that the points on the graph were consecutive numbers (1, 2, 3, 4, and 5) instead of 1, 2, 3, 5, and 6. The student needs to focus on graphing ordered pairs of numbers found in input-output table and understanding how to graph points on the coordinate plane with accuracy.</p>
28	<p>41.5 and any equivalent values are correct</p>	<p>To determine the length of the remaining open inches written in decimal form, the student could have found the decimal equivalent of $\frac{1}{2}$.</p>

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30	Option C is correct	<p>To identify the table of values that does NOT represent $y = x + 4.5$, the student should have identified a table where at least one y-value was not the result of adding 4.5 to the corresponding (paired) x-value. Because the value of $4 + 4.5$ is 8.0, the value of $5 + 4.5$ is 9.5, the value of $6 + 4.5$ is 10.5, and the value of $9 + 4.5$ is 13.5, this table of values does not represent $y = x + 4.5$.</p>
	Option B is incorrect	<p>The table represents the equation $y = x + 4.5$. The student likely made a calculation error when checking whether or not each y-value is the result of adding 4.5 to the corresponding x-value. The student needs to focus on understanding equations and evaluating them accurately to generate corresponding x- and y-values.</p>
	Option D is incorrect	<p>The table represents the equation $y = x + 4.5$. The student likely made a calculation error when checking whether or not each y-value is the result of adding 4.5 to the corresponding x-value. The student needs to focus on understanding equations and evaluating them accurately to generate corresponding x- and y-values.</p>
	Option A is incorrect	<p>The table represents the equation $y = x + 4.5$. The student likely made a calculation error when checking whether or not each y-value is the result of adding 4.5 to the corresponding x-value. The student needs to focus on understanding equations and evaluating them accurately to generate corresponding x- and y-values.</p>

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31	Option A correct	<p>To determine the scatterplot that best represents the data in the table, the students should have identified the scatterplot with points located at (15) , (12) , (20) , (16) , (14) , (18) , (15) , (16) , (12) and (15). The students should have determined for each point on the graph that the x-value (presented in the top row of the table) represents the horizontal distance from the height from zero and the y-value (presented in the bottom row of the table) represents the vertical distance up from the x-value.</p>
	Option B incorrect	<p>The student likely identified a graph where only one point was graphed for each unique value of x in the table. The student needs to focus on understanding how to graph points on the coordinate plane using x- and y-values from a table.</p>
	Option C incorrect	<p>The student likely identified a graph with most of the points graphed correctly but misidentified the locations of the reordered pairs in the table with x-values of 15 which were each graphed with an x-value of 4. The student needs to focus on understanding how to graph points on the coordinate plane using x- and y-values from a table.</p>
	Option D incorrect	<p>The student likely identified a graph with most of the points graphed correctly but misidentified the locations of the reordered pairs in the table with x-values of 15 which were each graphed with an x-value of 6. The student needs to focus on understanding how to graph points on the coordinate plane using x- and y-values from a table.</p>

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Item#	Rationale	
32	Option A correct	To determine how many miles Mr. Adams drove each day, the student should have divided the total number of miles by the number of days ($151.2 \div 24$), resulting in 6.3 miles.
	Option C incorrect	The student likely divided 51.2 by 24 but made errors in determining the digits of the quotient (answer). The student likely did not group when multiplying the divisional algorithm (procedure).

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33	Option B correct	To determine the volume of the container in cubic feet, the students should have understood that each of the 8 layers contains 36 blocks and multiplied 8×36 , resulting in 288 cubic feet.
	Option A incorrect	The student likely only calculated the number of boxes in the base layer shown in the picture. The student needs to focus on understanding how to determine the volume of a rectangular prism by multiplying the number of layers times the number of cubes that create the base layer.
	Option C incorrect	The student likely counted the number of visible square faces in the base layer of boxes shown in the picture and multiplied this value (48) by the number of layers (8), resulting in 384. The student needs

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34	Option C is correct	<p>To determine how many days of my year the blueberries before they are gone, the student should have interpreted how at $\frac{1}{2}$ cup of blueberries each day to be a division into equal parts.</p> <p>The student could have determined that dividing by $\frac{1}{2}$ the number first has to be considered a fraction with a denominator (bottom number) of 1, represented by $\frac{3}{1}$. Then the student could have determined that $\frac{3}{1}$ divided by $\frac{1}{2}$ is equal to $\frac{3}{1}$ multiplied by $\frac{1}{2}$ inverted (flipped upside down) $(\frac{3}{1} \div \frac{1}{2} = \frac{3}{1} \times \frac{2}{1} = \frac{6}{1} = 6)$. This is an</p>

Item#	Rationale	
36	Options correct	<p>To determine the amount of money represented by the students should have used the order of operations, PEMDAS. The students should have completed the operations in this order:</p> <p style="text-align: center;"> $\begin{array}{ccccccc} & & & - & & - & \\ - & & - & & - & - & - \\ & & & & & & - \end{array}$ </p> <p style="text-align: center;">-</p> <p style="text-align: right;">-</p> <p style="text-align: center;">-</p>