


2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
4	Option F is correct	<p>To determine which equation represents the area of (amount of space covered by) the trapezoid in square centimeters, the student should have substituted the values into the formula for the area of a trapezoid from the Area section on the STAAR Grade 6 Mathematics Materials within the student's test booklet, <math>A = \frac{1}{2}(b_1 + b_2)h</math>, where <math>A</math> represents the area, <math>b_1</math> represents the length of one base, <math>b_2</math> represents the length of the second base, and <math>h</math> represents the height (vertical distance from top to bottom). Substituting <math>b_1 = 8</math> and <math>b_2 = 12</math>, the student should have determined that the equation <math>A = \frac{1}{2}(8 + 12)h</math> best represents the area of a trapezoid with the given values.</p>
	Option G is incorrect	<p>The student likely multiplied the bases of the trapezoid (8 cm and 12 cm) and then multiplied the result by <math>h</math>, resulting in <math>A = \frac{1}{2}(8 \cdot 12)h</math>. The student needs to focus on understanding how to calculate the area of a trapezoid.</p>
	Option H is incorrect	<p>The student likely substituted the values into the formula correctly but did not complete all the steps, omitting the multiplication by <math>\frac{1}{2}</math>, resulting in <math>A = (8 + 12)h</math>. The student needs to focus on understanding how to calculate the area of a trapezoid.</p>
	Option J is incorrect	<p>The student likely multiplied the bases of the trapezoid (8 cm and 12 cm) and then multiplied the result by the height, <math>h</math>, but omitted the multiplication by <math>\frac{1}{2}</math>, resulting in <math>A = (8 \cdot 12)h</math>. The student needs to focus on understanding how to calculate the area of a trapezoid.</p>



2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
6	Option G is correct	To determine which expression is equivalent to $w \div \frac{1}{4}(4)$ , the student should have multiplied $\frac{1}{4}$ by 4, which results in the product (answer to a multiplication problem) of 1. The student then should have rewritten the expression as $w \div 1$ .
	Option F is incorrect	The student likely multiplied $\frac{1}{4}$ by 4 incorrectly. The student needs to focus on recognizing the operation of multiplication in an expression.
	Option H is incorrect	The student likely rearranged the problem to form a multiplication problem. The student needs to focus on recognizing the operation of multiplication in an expression.
	Option J is incorrect	The student likely subtracted $\frac{1}{4}$ from 1 and rearranged the problem to form a multiplication problem. The student needs to focus on recognizing the operation of multiplication in an expression.

2022 STAAR Grade 6 Mathematics Rationales

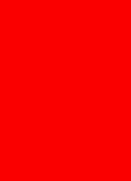
Item #	Rationale	
7	Option D is correct	To determine the amount of time in minutes the main character was on stage, the student could have multiplied 90 minutes by 80% (0.80), resulting in 72 minutes. This is an efficient way to solve the problem; however, other methods could be used to solve the problem correctly.
	Option A is incorrect	The student likely divided 80 by 90 minutes, ignoring the percent sign, resulting in $\frac{80}{90} \approx 0.889$ . The student then could have multiplied 0.889 by 100, resulting in 88.9 minutes. The student needs to focus on understanding how to find a percent of a whole.
	Option B is incorrect	The student likely divided 90 minutes by 80, ignoring the percent sign, resulting in $\frac{90}{80} = 1.125$ . The student then could have multiplied 1.125 by 100, resulting in 112.5 minutes. The student needs to focus on understanding how to find a percent of a whole.
	Option C is incorrect	The student likely confused 80% with 80 minutes. The student needs to focus on understanding how to find a percent of a whole.





2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
9	Option D is correct	To determine which coordinates represent the location of a point inside the shaded section, the student could have determined by looking at the graph that the point with an ordered pair that is 4.5 units to the left of the origin (0, 0) and 1.5 units above the origin is in the shaded section. Since the point is located 4.5 units to the left of the origin, the value of the x-coordinate (horizontal position from 0) is -4.5, and since the point is located 1.5 units above the origin, the value of the y-coordinate (vertical position from 0) is 1.5.
	Option A is incorrect	The student likely chose a point represented by an ordered pair with reversed values for the x-coordinate and the y-coordinate and with the opposite signs for the values of the x-coordinate and the y-coordinate (-1.5 instead of 1.5, 4.5 instead of -4.5), resulting in the point located at (-1.5, 4.5) instead of (-4.5, 1.5). The student needs to focus on understanding how to identify the ordered pair that represents a point on a coordinate grid.
	Option B is incorrect	The student likely chose a point represented by an ordered pair with reversed values for the x-coordinate and the y-coordinate, resulting in the point located at (1.5, -4.5) instead of (-4.5, 1.5). The student needs to focus on understanding how to identify the ordered pair that represents a point on a coordinate grid.
	Option C is incorrect	The student likely chose a point represented by an ordered pair with opposite signs for the x-coordinate (4.5 instead of -4.5) and the y-coordinate (-1.5 instead of 1.5), resulting in the point located at (4.5, -1.5) instead of (-4.5, 1.5). The student needs to focus on understanding how to identify the ordered pair that represents a point on a coordinate grid.







2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
13	Option A is correct	tc-0712.4red [8949-1 (t)-3 ea(g)p To determine



2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
15	Option D is correct	To determine which statement supports the data shown in t24 0.72 re f 85.67-33.4C 0 Tr 11g-5.67-33.40.9 (t)oC /TH <92 re f 85p6a3 — — — — —
		—
		—

2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
16	Option H is correct	<p style="text-align: right;">—</p> <p style="text-align: center;">—</p> <p style="text-align: center;">—</p>
		<p style="text-align: right;">—</p>
		<p style="text-align: right;">—</p>
		<p style="text-align: right;">—</p>





2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
18	Option J is correct	To determine









# 2022 STAAR Grade 6 Mathematics Rationales

Rationales		





2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
25	Option C is correct	To determine which list represent 6h list 7t 1 >>BDC /TH 13 669 22 669 22 0216 Tc 9.81 0 Td [(lis)28 1 >>BDC -0.026 T

2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
26	Option G is correct	To determine which inequality represents all possible values of $x$ , the number of dogs Kelli can walk on Monday in addition to Ms. Lincoln's dogs, the student should have subtracted 5 from both sides of the inequality, resulting in $x - 5 > 13$ .

2022 STAAR Grade 6 Mathematics Rationales



## 2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
29	0.4 and any equivalent values are correct	To determine the decimal equivalent to the fraction of the price that Susie paid for her movie ticket, the student could have divided 2 by 5, resulting in 0.4. This is an efficient way to find the ratio.





2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
32	Option J is correct	To determine which inequality represents all possible values of $m$ , the number of miles Mr. Estrada can travel in the car with the remaining gasoline in the tank, the student should have recognized that the sum of the miles he traveled after filling up the tank and the number of miles he can travel with the remaining gasoline, $m + 194$ , cannot exceed 510 miles. The student could have then determined that the inequality $m + 194 \leq 510$ represents the situation. Lastly, the student then could have subtracted 194 from both sides of the inequality, resulting in $m \leq 316$ .
	Option F is incorrect	The student likely made a subtraction error, subtracting 100 from 500 and 10 from 94, and did not realize that this situation would be represented by an inequality that uses the symbol for "less than or equal to" instead of "greater than or equal to". The student needs to focus on understanding how to model and solve a one-step inequality and how to subtract whole numbers.
	Option G is incorrect	The student likely subtracted 194 from both sides of the inequality but did not realize that this situation would be represented by an inequality that uses the symbol for "less than or equal to" instead of "greater than or equal to". The student needs to focus on understanding how to model and solve a one-step inequality.
	Option H is incorrect	The student likely made a subtraction error, subtracting 100 from 500 and 10 from 94. The student





2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
34	Option G is correct	To determine which expression is equivalent to $1,000 + 196$ , the student could first have recognized that 1,000 can be written as the product $10 \times 10 \times 10 = 10^3$ . Next, the student could have recognized that $196 = 14 \times 14 = 14^2$ . The student could have then concluded that $10^3 + 14^2$ is an expression that is equivalent to $1,000 + 196$ . This is an efficient way to solve the problem; however, other methods could be used to solve the problem correctly.
	Option F is incorrect	The student likely made an error when writing 1,000 as a power of 10, using $1,000 = 10^2$ instead of $10^3$ , and then rewrote 196 as the product of 7 and 28. The student needs to focus on rewriting equivalent expressions using whole-number exponents.
	Option H is incorrect	The student likely made an error when writing 1,000 as a power of 10, using $1,000 = 100^3$ instead of $10^3$ , and then rewrote 196 as the product of 7 and 28. The student needs to focus on rewriting equivalent expressions using whole-number exponents.
	Option J is incorrect	The student likely made an error when writing 1,000 as a power of 10, using $1,000 = 100^2$ instead of $10^3$ , but correctly rewrote 196 as the square of 14. The student needs to focus on rewriting equivalent expressions using whole-number exponents.

2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
35	Option D is correct	To determine the number of dogs the veterinarian examined on Thursday, the student could have

2022 STAAR Grade 6 Mathematics Rationales

Item #	Rationale	
36	Option H is correct	To determine how much more money a marketing manager would earn than a financial analyst over 10 years, the student could have subtracted \$76,950 from \$115,750, resulting in \$38,800. The student then could have multiplied this difference by 10 years, resulting in $\$38,800 \times 10 = \$388,000$ . This is an efficient way to solve the problem; however, other methods could be used to solve the problem correctly.
	Option F is incorrect	The student likely subtracted \$76,950 from \$115,750, resulting in \$38,800, but ignored the 10 years.



