Test Definition File

Item #	Correct Answer(s)	Standard
1	B	CCSS.Math.Content.7.RP.A.1
2	B	CCSS.Math.Content.7.RP.A.1
3	C, D	CCSS.Math.Content.7.RP.A.2.a
4	C	CCSS.Math.Content.7.RP.A.2.a
5	See Scoring Rubric	CCSS.Math.Content.7.RP.A.2.b
6	A	CCSS.Math.Content.7.RP.A.2.b
7	See Scoring Rubric	CCSS.Math.Content.7.RP.A.2.c
8	A	CCSS.Math.Content.7.RP.A.2.c
9	C	CCSS.Math.Content.7.RP.A.2.d
10	D	CCSS.Math.Content.7.RP.A.2.d
11	A	CCSS.Math.Content.7.RP.A.3
12	D	CCSS.Math.Content.7.RP.A.3
13	See Scoring Rubric	CCSS.Math.Content.7.NS.A.1
14	See Scoring Rubric	CCSS.Math.Content.7.NS.A.1
15	See Scoring Rubric	CCSS.Math.Content.7.NS.A.2
16	B, E	CCSS.Math.Content.7.NS.A.2
17	B	CCSS.Math.Content.7.NS.A.3
18	See Scoring Rubric	CCSS.Math.Content.7.NS.A.3
19	See Scoring Rubric	CCSS.Math.Content.7.RP.A.1

Rationale: PRACTICE Grade 7 Open Up Interim Assessment 2

Rationale

Question #1 (E183699)	**CCSS.Math.Content.7.RP.A.1 > DOK 1**
Marion is driving between two towns that are close together. If she drives 1/5 the distance of the trip in 15 minutes, what is her rate per hour?	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
	Answer Choice Rationales
A. $\frac{1}{75}$ of the trip per hour	**A.** This is the quotient of 1/5 divided by 15.
B. $\frac{4}{5}$ of the trip per hour	**B. Correct: This is the quotient of 1/5 divided by 1/4 of an hour.**
C. $\frac{5}{4}$ of the trip per hour	**C.** This is the quotient of 1/4 divided by 1/5.
D. $\frac{15}{5}$ of the trip per hour	**D.** This is the product of 1/5 and 15.
Question #2 (E262095)	**CCSS.Math.Content.7.RP.A.1 > DOK 2**
A cheetah can run $2\frac{2}{5}$ kilometers in $1\frac{1}{2}$ minutes at top speed. What is the top speed of a cheetah in kilometers per hour?	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
	Answer Choice Rationales
A. 54 kilometers per hour **B.** 96 kilometers per hour **C.** 144 kilometers per hour **D.** 216 kilometers per hour	**A.** This is the result of adding the whole number and numerator to the denominator to figure out the new numerator when creating a mixed fraction: 2 2/5 to 9/5 instead of 12/5 and 1 1/2 to 2/4 instead of 3/2.
	B. Correct: This is the result of correctly changing 2 2/5 to the improper fraction 12/5 and multiplying by the reciprocal of the improper fraction of 1 1/2 (2/3) to get 8/5 kilometers per minute and then multiplying by 60 minutes to get kilometers per hour: 8/5 × 60/1 = 96 kph.
	C. This is the result of multiplying 2 2/5 by 60 without converting to kilometers per minute first. This is the result of how far a cheetah could travel at max speed for 1.5 hours.
	D. This is the result of properly converting 2 2/5 to 12/5 and 1 1/2 to 3/2 but multiplying them together to get 18/5 kilometers per minute and converting to kilometers per hour.

Question #3 (E261710)

Which of the tables show a proportional relationship between the *x*- and *y*-values? Choose the TWO correct answers.

A.

x	y
2	3
4	5
6	7
8	9
10	11

B.

x	y
1	1
2	4
3	9
4	16
5	25

C.

x	y
1	3
2	6
3	9
4	12
5	15

D.

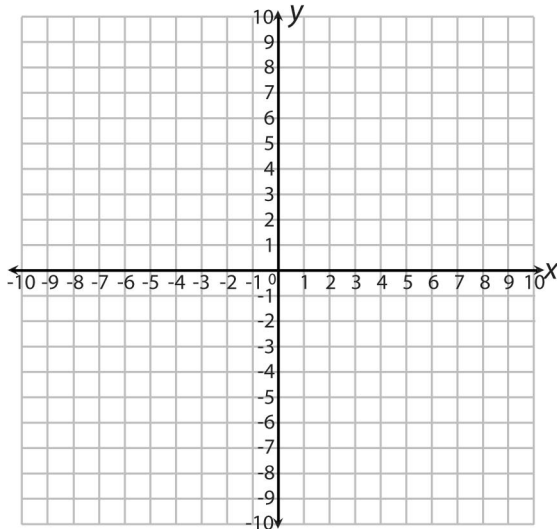| x	y
2	1
4	2
6	3
8	4
10	5

CCSS.Math.Content.7.RP.A.2.a > DOK 2

Decide 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.

Answer Choice Rationales

A. This table does not show a proportional relationship. It does show a linear relationship because the difference between consecutive *x*-values and consecutive *y*-values is 2, but it is not proportional because it doesn't go through (0, 0). There is no constant proportion between *x* and *y*.

B. This table does not show a proportional relationship. The ratio between *x* and *y* varies and is equal to $1/x$ (so that $y = x \cdot x$).

C. Correct: This table shows a proportional relationship. The ratio between *x* and *y* is constant and equal to 1/3 ($y = 3x$).

D. Correct: This table shows a proportional relationship. The ratio between *x* and *y* is constant and equal to 2/1 ($y = \frac{1}{2}x$).

Rationale: PRACTICE Grade 7 Open Up Interim Assessment 2

Question #4 (E261958)

Use this coordinate plane to help answer the question.

Which two points belong to the graph of a proportional relationship?

A. $(1, 2)$ and $(4, 5)$
B. $(4, 2)$ and $(2, 2)$
C. $(-2, 1)$ and $(4, -2)$
D. $(0, -2)$ and $(2, 0)$

CCSS.Math.Content.7.RP.A.2.a > DOK 1

Decide 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.

Answer Choice Rationales

A. This is the result of adding 3 to both coordinates of the point (1, 2), but the line connecting the points would not cross through the origin. A proportional coordinate for (1, 2) would be (4, 8), not (4, 5).
B. This is the result of a straight line running through the 2 on the *y*-axis, not the origin.
C. **Correct: These two points are on a line that passes through the origin, and so they belong to a proportional relationship.**
D. These two points fall on the *y*- and *x*-axes, not on a line that passes through the origin.

Question #5 (E263313)

Karley sells baskets of tomatoes at her father's vegetable stand. Different numbers of baskets and the costs are shown in the table.

Baskets of Tomatoes at a Vegetable Stand

Number of Baskets	4	6	8	10	12
Cost ($)	10	15	20	25	30

What is the cost per basket for the tomatoes?

Use the on-screen keyboard to type the answer in the box below.

This question must be answered online.

CCSS.Math.Content.7.RP.A.2.b > DOK 2

Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
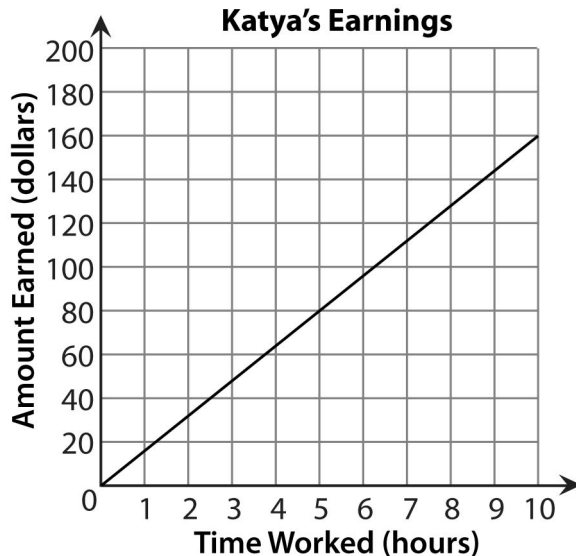
Rationale

- The correct response is **$2.50**.

  There is a constant ratio of the number of baskets and the cost equal to 4 baskets for $10, which is 10 ÷ 4 = $2.50 per basket.

Rationale: PRACTICE Grade 7 Open Up Interim Assessment 2

Question #6 (E172785)

The graph shows how the amount of money Katya earns depends on the time she works.

Katya's Earnings

How much does Katya earn per hour?

A. $16.00 per hour
B. $6.25 per hour
C. $20.00 per hour
D. $1.60 per hour

CCSS.Math.Content.7.RP.A.2.b > DOK 2

Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

Answer Choice Rationales

A. **Correct: Katya earns $160 for 10 hours of work, so her pay rate is $160 ÷ 10 = $16.00 per hour.**
B. This is the result of dividing 10 ÷ $160 and moving the decimal point.
C. This is the result of misreading the graph.
D. This is the result of making a place-value error.

Question #7 (E235142)

Some real-world relationships are described below. Each can be represented by an equation $y = kx$ where x is the independent variable and k is the constant of proportionality.

Drag and drop the equations into each box that correctly represents the relationship.

This question must be answered online.

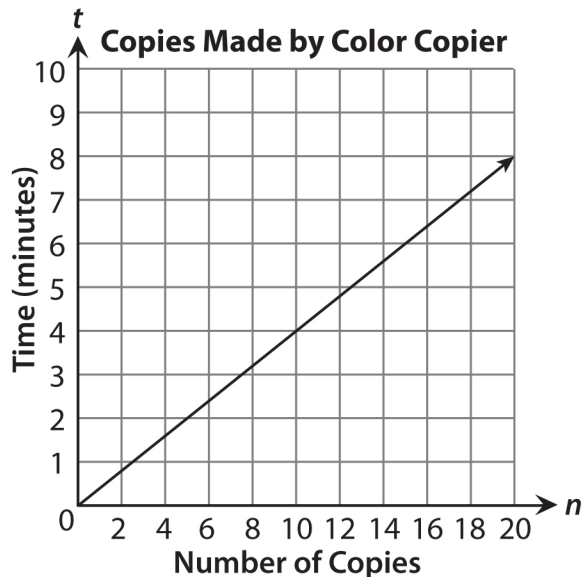### CCSS.Math.Content.7.RP.A.2.c > DOK 2

Represent proportional relationships by equations.

Rationale

- All of the relationships described are proportional. A proportional relationship is represented in the form $y = kx$, where k represents the constant of proportionality. The situations described have constants of proportionality of 3, 5, and 4, respectively. Thus, the corresponding correct equations are $y = 3x$, $y = 5x$, and $y = 4x$.

Question #8 (E263496)

The graph below shows the relationship between the number of color copies a copier makes (*n*) and the time it takes to make them (*t*) .

Copies Made by Color Copier

Time (minutes) vs Number of Copies

Which equation represents this relationship?

A. $t = 0.4n$
B. $t = 12n$
C. $t = 8n$
D. $t = 2.5n$

**CCSS.Math.Content.7.RP.A.2.c > DOK 2**

Represent proportional relationships by equations.

Answer Choice Rationales

A. **Correct: The graph shows that it takes the copier 8 minutes to make 20 copies. The number of minutes per copy is 8 ÷ 20 = 0.4. The number of minutes it takes is equal to the number of copies times 0.4. In other words, $t = 0.4c$.**
B. This is the result of subtracting 20 – 8 to find the number of minutes per copy.
C. This is the result of using 8 minutes for 20 copies as the number of minutes per copy.
D. This is the result of dividing 20 by 8 instead of 8 by 20 when finding the number of minutes per copy.

Question #9 (E262070)

The graph below shows the relationship between x, the number of movie tickets purchased, and y, the cost of the tickets.
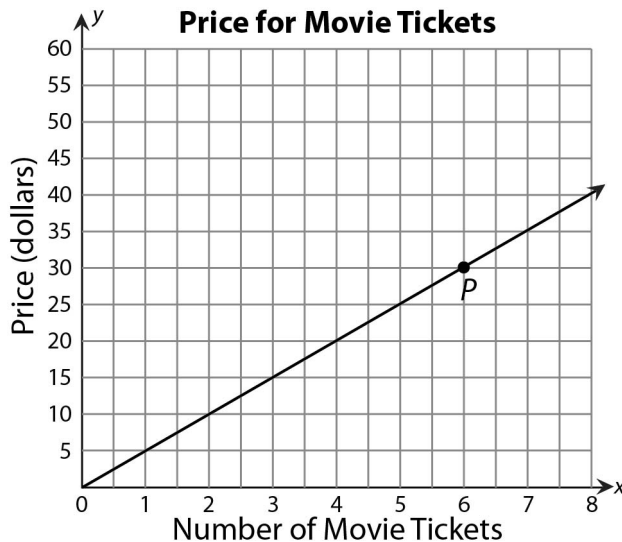
What does point _P_ represent on the graph?

A. The price of 1 ticket is $30.00, which is $30.00 per ticket.
B. The price of 1 ticket is $30.00, which is $5.00 per ticket.
C. The price of 6 tickets is $30.00, which is $5.00 per ticket.
D. The price of 6 tickets is $30.00, which is $6.00 per ticket.
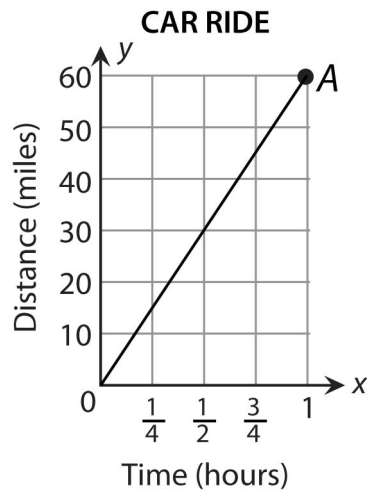
CCSS.Math.Content.7.RP.A.2.d > DOK 2

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.

Answer Choice Rationales

A. This response correctly identifies the _y_-intercept of the point _P_, but does not show understanding that $30.00 is the price of 6 movie tickets, not just 1.
B. This response correctly identifies the unit rate of $5.00 per ticket, but misunderstands the meaning of (6, 30) for point _P_.
C. **Correct: This correctly identifies that 6 movie tickets are $30.00 and divides 30 by 6 to find that each movie ticket is $5.00.**
D. This correctly identifies that 6 movie tickets are $30.00, but incorrectly divides 30 by 6 to get $6.00 instead of $5.00.

Question #10 (E259211)

The graph below shows the relationship between the time a car is driven and the distance it travels.

CAR RIDE

Which statement best explains the meaning of point *A*?

A. At 60 miles, the car reaches its slowest speed.
B. After 1 hour of driving, the car is traveling its fastest speed.
C. The car travels at a constant rate of 1 mile per 60 minutes.
D. The car travels 60 miles in 1 hour.

CCSS.Math.Content.7.RP.A.2.d > DOK 2

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.

Answer Choice Rationales

A. This is the result of misinterpreting the time as speed.
B. This is the result of misinterpreting the line as an increase in speed.
C. This is the result of reversing the *x*- and *y*-axes.
D. **Correct: This is the result of correctly interpreting the point (1, 60) as the car traveling at 60 miles per hour.**

Question #11 (E174700)

Maria is trying to decide which one of two winter coats she should buy. The blue coat usually costs $48 but is on sale for 25% off. The black coat usually costs $56 but is on sale for 40% off. How much less is the sale price of the black coat than the sale price of the blue coat?

A. $2.40
B. $8.00
C. $10.40
D. $22.40

CCSS.Math.Content.7.RP.A.3 > DOK 2

Use proportional relationships to solve multistep ratio and percent problems.

Answer Choice Rationales

A. **Correct: 48 x 0.75 = $36.00 and 56 x 0.6 = $33.60. $36 minus $33.60 equals $2.40.**
B. This is the result of subtracting $48 from $56.
C. This is the result of finding 40% of $56 and 25% of $48, and then subtracting these two results.
D. This is the result of finding 40% of $56.

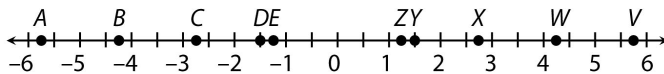|	
Question #12 (E259345) **Marisol bought a scooter. The 8% sales tax on the scooter was \$10.50. What was the total cost including the sales tax?** **A.** \$11.34 **B.** \$23.63 **C.** \$131.25 **D.** \$141.75	**CCSS.Math.Content.7.RP.A.3 > DOK 2** Use proportional relationships to solve multistep ratio and percent problems. **Answer Choice Rationales** **A.** This results from adding 8% to \$10.50. **B.** This results from using 0.8 instead of 0.08 to represent 8%. **C.** This is the price of the scooter before sales tax. **D.** **Correct: The price of the scooter before sales tax is \$10.50 ÷ 0.08 = \$131.25. The total cost is \$131.25 + \$10.50 = \$141.75.**
Question #13 (E220906) **At the start of the day, a bag of rice contains $5\frac{3}{4}$ cups of rice. That day, the rice is used for two different recipes, one that uses $1\frac{1}{2}$ cups and then one that uses $2\frac{3}{4}$ cups.** **Several values are shown on the number line below.** **Drag and drop the correct letters to make the statements below true.** *This question must be answered online.*	**CCSS.Math.Content.7.NS.A.1 > DOK 2** 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. **Rationale** • The amount of rice remaining is found by calculating 5 3/4 – 1 1/2 – 2 3/4. The value 5 3/4 is represented on the number line at point *V*. Subtracting 1 1/2 from 5 3/4 gives 4 1/4, which is represented on the number line as point *W*. Finally, subtracting 2 3/4 from 4 1/4 gives the amount in the bag at the end of the day, 1 1/2 cups, which is represented on the number line as point *Y*.

Question #14 (E264217)

The elevations of four locations in Southern California are shown on the number line below.
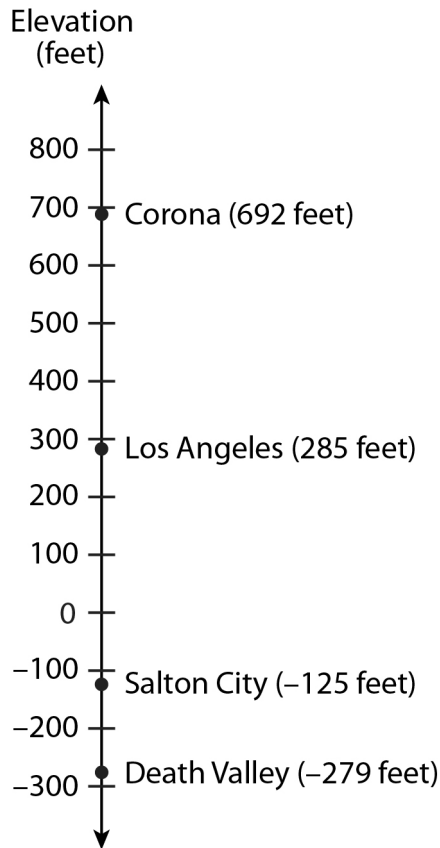
Elevation
(feet)

Enter the difference, in feet, between the elevations of Corona and Salton City.

Use the on-screen keyboard to type your answer in the box below.

This question must be answered online.

CCSS.Math.Content.7.NS.A.1 > DOK 1

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.

Rationale

• The correct response is **817** feet.

According to the chart, the elevation of Corona is 692 feet, and the elevation of Salton City is –125 feet. The difference between these two elevations is 692 – (–125) = 692 + 125 = 817 feet.

Question #15 (E220530)

Perform the calculations to simplify the expression shown below. Drag and drop the correct values into the boxes.

This question must be answered online.

CCSS.Math.Content.7.NS.A.2 > DOK 2

Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

Rationale

• $\frac{4}{3}\left(-\frac{3}{5} \div 4\right) = \frac{4}{3}\left(-\frac{3}{5} \times \frac{1}{4}\right) = \frac{4}{3} \times \left(-\frac{3}{20}\right) = -\frac{12}{60} = -\frac{1}{5}$

Question #16 (E264555)

Which fractions have the same value as $-\frac{3}{5}$?
Choose the TWO fractions that are correct.

A. $-\frac{3}{-5}$

B. $\frac{-3}{5}$

C. $-\frac{-3}{5}$

D. $\frac{-3}{-5}$

E. $-\frac{-3}{-5}$

CCSS.Math.Content.7.NS.A.2 > DOK 1

Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

Answer Choice Rationales

A. This is the result of incorrectly choosing a fraction that has a positive value, since two negatives will equal a positive.

B. **Correct: This is the result of choosing a fraction that equals –3/5. If one number in a fraction is negative, then the entire fraction is negative.**

C. This is the result of incorrectly choosing a fraction that has a positive value, since two negatives will equal a positive.

D. This is the result of incorrectly choosing a fraction that has a positive value, since two negatives will equal a positive.

E. **Correct: This is the result of choosing a fraction that equals –3/5. In this case, two of the negatives simply to be positive, leaving one of the numbers negative. If one number in a fraction is negative, then the entire fraction is negative.**

Question #17 (E201934)

Jessica is shopping at an online store that offers free shipping and doesn't charge her sales tax. Jessica orders two books for $8.99 each, a video game for $19.99, and three board games for $11.99 each. She pays for her purchases with a $100 gift card. What is the remaining balance on her gift card after these purchases?

A. $6.07
B. $26.06
C. $59.03
D. $73.94

CCSS.Math.Content.7.NS.A.3 > DOK 2

Solve real-world and mathematical problems involving the four operations with rational numbers.

Answer Choice Rationales

A. This answer results from finding the remaining balance when two video games, rather than one, are included in the calculation of the total purchase amount.

B. **Correct: Jessica spends 2($8.99) + $19.99 + 3($11.99) = $17.98 + $19.99 + $35.97 = $73.94. So the balance remaining on her gift card is $100 – $73.94 = $26.06.**

C. This answer results from finding the remaining balance when one of each item is purchased.

D. This answer results from finding the total amount Jessica spent instead of the balance left on the gift card after she spent this amount.

Question #18 (E264297) A cross-country race is $2\frac{1}{2}$ miles long. Jenna has completed 75% of the race. How many miles has Jenna run so far? **Use the on-screen keyboard to type the correct answer in the box below.** *This question must be answered online.*	**CCSS.Math.Content.7.NS.A.3 > DOK 2** Solve real-world and mathematical problems involving the four operations with rational numbers. **Rationale** • The correct response is **1 7/8** miles. (Note 1.875 miles is also an acceptable answer). Since 75% = 3/4, and 2 1/2 = 5/2, we can find 75% of 2 1/2 by multiplying 3/4 × 5/2 = 15/8. Jenna has run 15/8 miles, which we can write as 1 7/8 miles or 1.875 miles.
Question #19 (E191938) Howard is designing a poster board that will be enlarged to make a sign. • **The dimensions of the poster board are 24 inches by 36 inches.** • **The dimensions of the sign will be 12 feet by 18 feet.** **What is the ratio of the area of the poster board to the area of the sign? Show your work or explain your answer.**	**CCSS.Math.Content.7.RP.A.1 > DOK 2** Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. **2 Point Response:** The response is correct and complete. A sample 2-point response is shown below. Accept a correct answer with appropriate work or a sufficient explanation. *Sample Correct Answer:* 36 : 1 (or equivalent) The poster board has an area of 24 in. x 36 in. = 864 square inches. The sign has an area of 12 ft x 18 ft = 144 in. x 216 in. = 31,104 square in. The ratio of the area of the sign to the area of the poster is 31,104 square in/863 square in. = 36. **1 Point Response:** The response is partially correct. This level includes a correct answer with insufficient work or an insufficient explanation, OR an incorrect answer based on minor errors. **0 Point Response:** The response is incorrect or there is no response.