The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

INTEGRATED ALGEBRA

Friday, June 20, 2014 — 9:15 a.m. to 12:15 p.m.

SAMPLE RESPONSE SET

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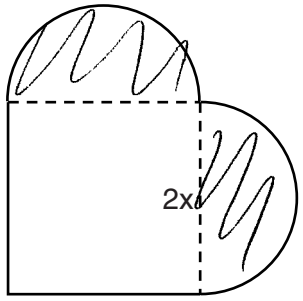
Question 31

31 A patio consisting of two semicircles and a square is shown in the diagram below. The length of each side of the square region is represented by $2x$. Write an expression for the area of the entire patio, in terms of x and π.



$(2x)(2x) = 4x^2$

$\pi(x)^2 = x^2\pi$

Area $= 4x^2 + x^2\pi$

Score 2: The student has a complete and correct response.

Question 31

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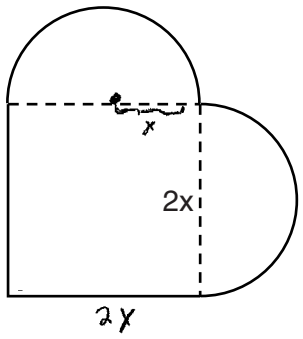

Area of ⊙ $= \pi r^2 = x^2\pi$

area of □ $= (2x)(2x) = 4x^2$

patio $= x^2\pi + 4x^2 = x^2(\pi + 4)$

Score 2: The student has a complete and correct response.

Question 31

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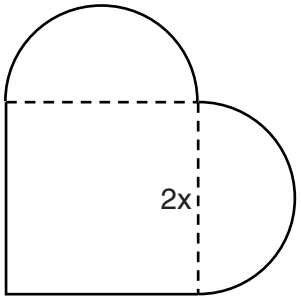

$2x \cdot 2x = 4x^2$ - square area

πx^2 = 2 semicircle area

$\pi 5x^2$

Score 1: The student made one computational error when combining the areas.

Question 31

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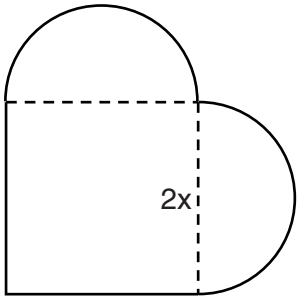

$\pi(2x)^2 + (2x)^2$

$4x^2\pi + 4x^2$

$\text{Area} = 4x^2\pi + 4x^2$

Score 1: The student made one conceptual error by using a radius of $2x$ for the area of the semicircles.

Question 31

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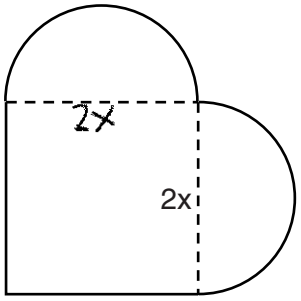


$A = \pi r^2$

$2x \div 2 = x$

$\pi x^2 + \pi x^2 + 4x$

$A = L \times W$

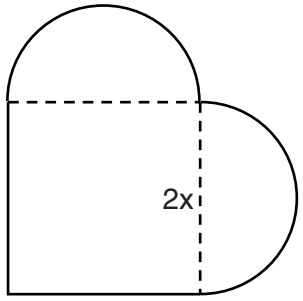
$4x$

$2\pi x^2 + 4x$

Score 0: The student found the areas of two circles instead of two semicircles and then made one computational error when finding the area of the square.

Question 31

31 A patio consisting of two semicircles and a square is shown in the diagram below. The length of each side of the square region is represented by $2x$. Write an expression for the area of the entire patio, in terms of x and π.



$A = l \cdot w + \pi d$

$(2x)(2x) + \pi(2x)$

$4x + 2x\pi$

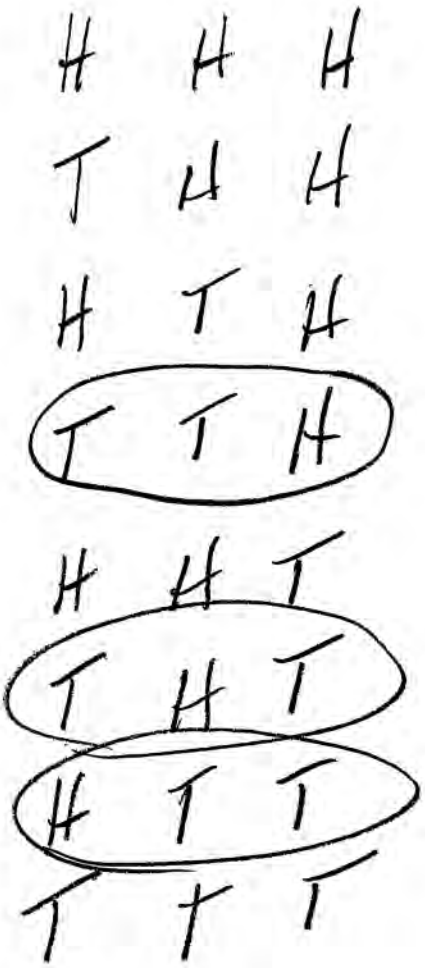
$6x\pi$

Score 0: The student made one conceptual error by finding the circumference of the semicircles and then made another conceptual error when squaring $2x$.

Question 32

32 Clayton is performing some probability experiments consisting of flipping three fair coins.

What is the probability that when Clayton flips the three coins, he gets two tails and one head?



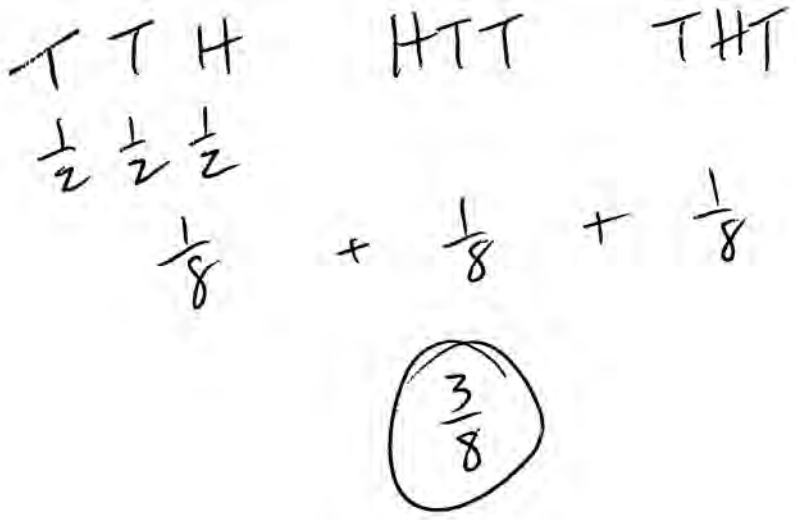
$\frac{3}{8}$

Score 2: The student has a complete and correct response.

Question 32

32 Clayton is performing some probability experiments consisting of flipping three fair coins.

What is the probability that when Clayton flips the three coins, he gets two tails and one head?



Score 2: The student has a complete and correct response.

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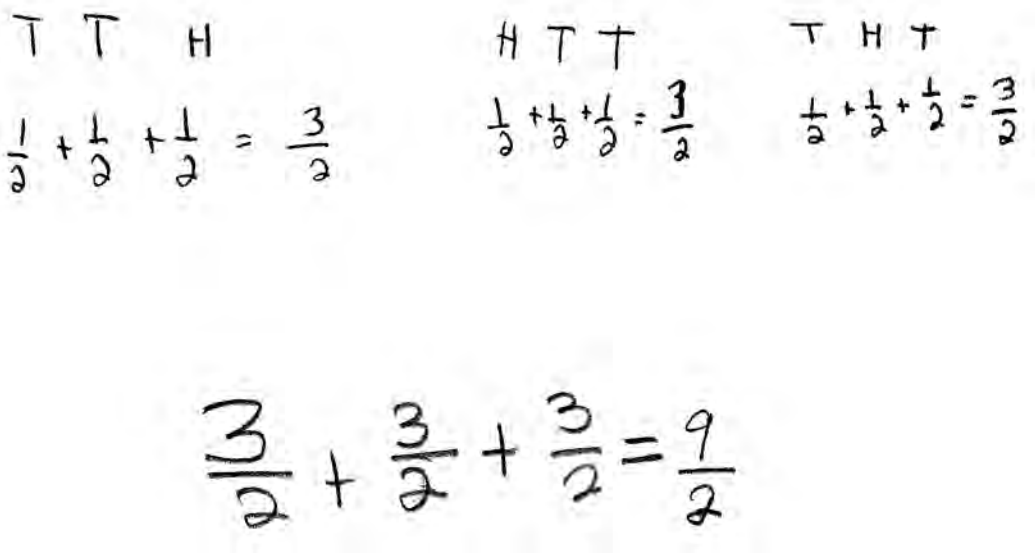
What is the probability that when Clayton flips the three coins, he gets two tails and one head?

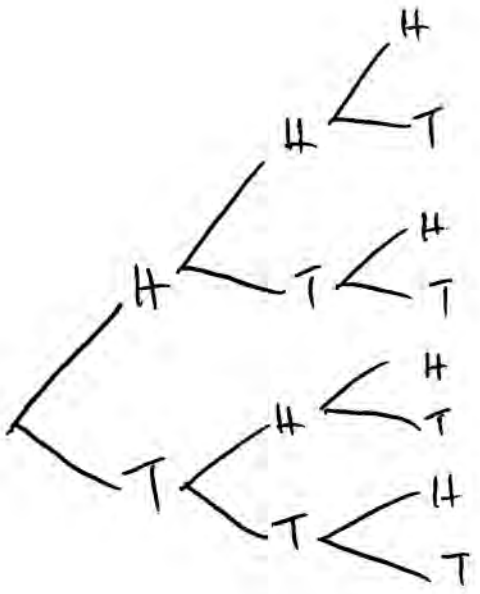


Score 1: The student made one conceptual error by adding $\frac{1}{2} + \frac{1}{2} + \frac{1}{2}$ to get $\frac{3}{2}$. This conceptual error resulted in a probability greater than 1.

Question 32

32 Clayton is performing some probability experiments consisting of flipping three fair coins.

What is the probability that when Clayton flips the three coins, he gets two tails and one head?

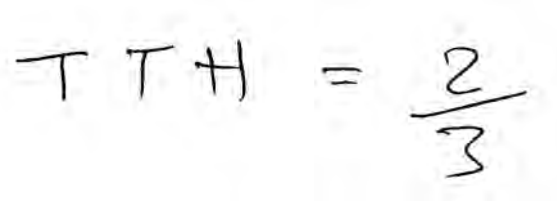


Score 1: The student made one conceptual error by using each branch of the tree diagram as the denominator.

Question 32

32 Clayton is performing some probability experiments consisting of flipping three fair coins.

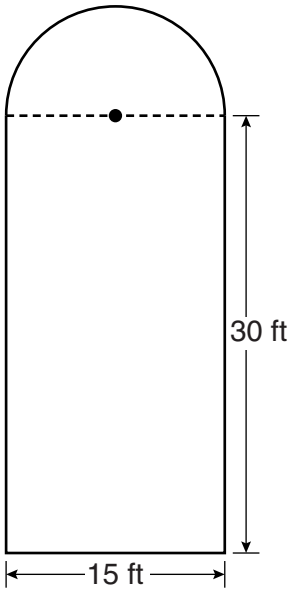
What is the probability that when Clayton flips the three coins, he gets two tails and one head?



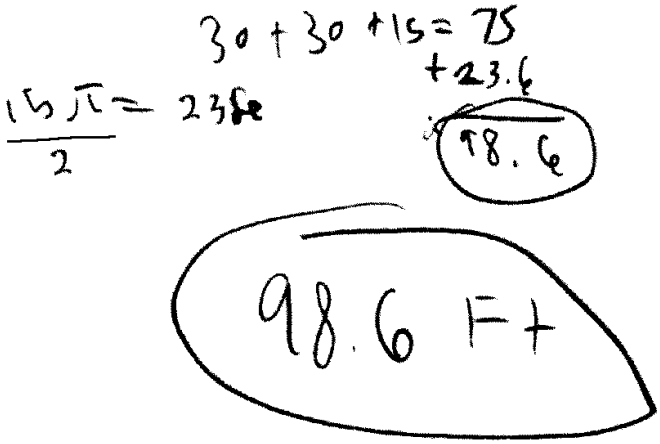
Score 0: The student listed one correct outcome, but showed no work to support an incorrect answer.

Question 33

33 Ross is installing edging around his pool, which consists of a rectangle and a semicircle, as shown in the diagram below.



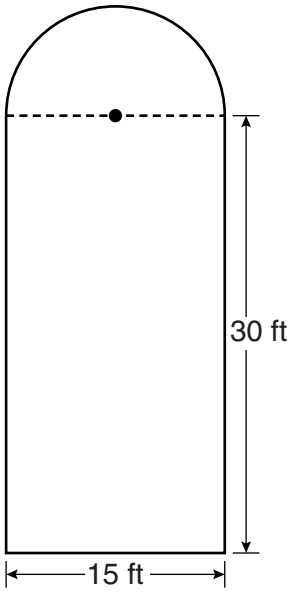
Determine the length of edging, to the *nearest tenth of a foot*, that Ross will need to go completely around the pool.



Score 2: The student has a complete and correct response.

Question 33

33 Ross is installing edging around his pool, which consists of a rectangle and a semicircle, as shown in the diagram below.



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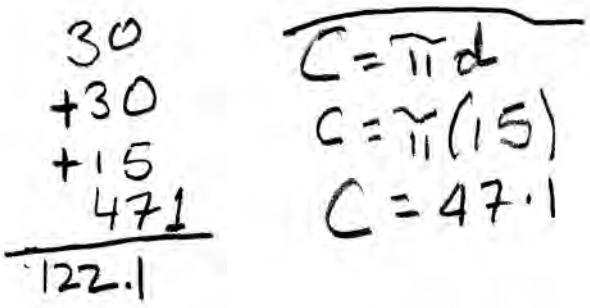
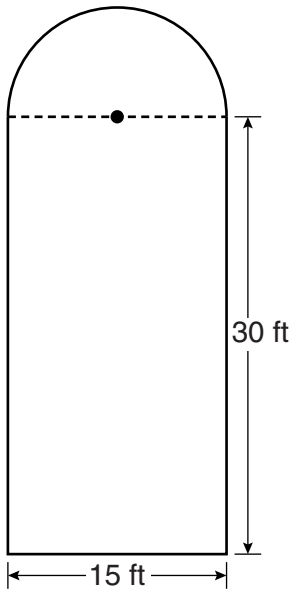


Score 1: The student made one conceptual error by finding the circumference of the circle instead of the semicircle.

Question 33

33 Ross is installing edging around his pool, which consists of a rectangle and a semicircle, as shown in the diagram below.



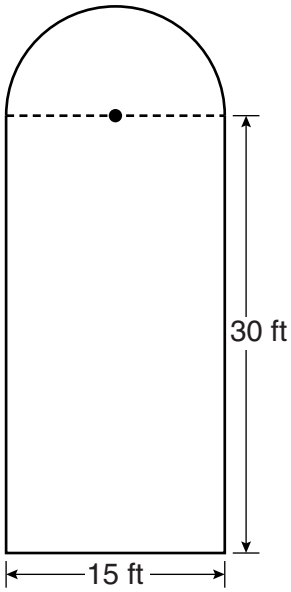
Determine the length of edging, to the *nearest tenth of a foot*, that Ross will need to go completely around the pool.

$P = (2\pi r)\frac{1}{2}$ ft
$P = 2l + 2w$ ft
$P = 117.5$ ft
$P = 23.5619449$ ft
$= 90$ ft
$P = 2(30) + 2(15)$ ft
$P = 60$ ft 30 ft
$P = 90$ ft
$P = 113.5619449$ ft
113.6 ft

Score 1: The student made one conceptual error by finding the perimeter of the rectangle instead of the sum of just three sides.

Question 33

33 Ross is installing edging around his pool, which consists of a rectangle and a semicircle, as shown in the diagram below.



Determine the length of edging, to the *nearest tenth of a foot*, that Ross will need to go completely around the pool.

$30 \times 15 = 450$

$\pi (7.5)^2$

56.25π

176.7

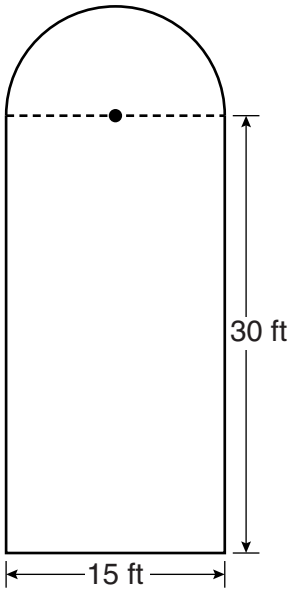
$4200 - 176.7$

273 feet

Score 0: The student made more than one conceptual error.

Question 33

33 Ross is installing edging around his pool, which consists of a rectangle and a semicircle, as shown in the diagram below.



Determine the length of edging, to the *nearest tenth of a foot*, that Ross will need to go completely around the pool.

30 + 30 + 15

75 ft

Score 0: The student found 75, but did no further work.

Question 34

34 Solve the following system of equations algebraically for all values of x and y.

$$y = x^2 + 2x - 8$$
$$y = 2x + 1$$

$y = x^2 + 2x - 8$ $\qquad$ $y = 2x + 1$

$x^2 + 2x - 8 = 2x + 1$
$-2x - 1 \quad -2x - 1$
$x^2 - 9 = 0$
$(x - 3)(x + 3)$
$x = 3$, $x = -3$

$y = 2x + 1$
$y = 2(3) + 1$
$y = 6 + 1$
$y = 7$

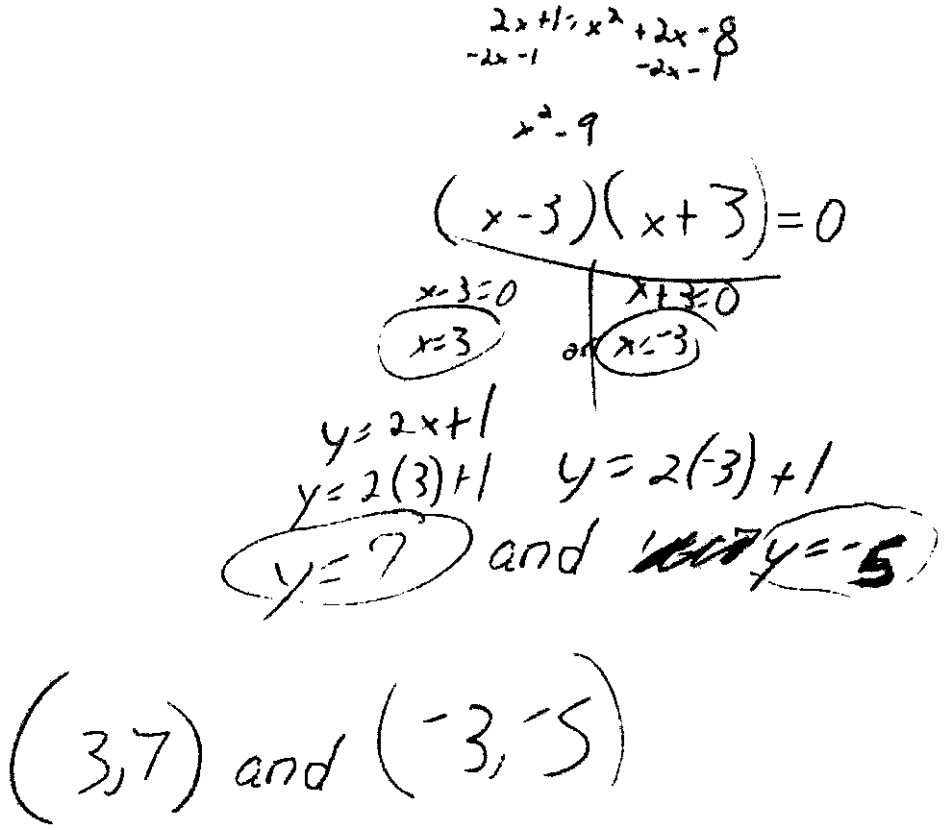
$y = 2x + 1$
$y = 2(-3) + 1$
$y = -6 + 1$
$y = -5$

Score 3: The student has a complete and correct response.

Question 34

34 Solve the following system of equations algebraically for all values of x and y.

$$y = x^2 + 2x - 8$$
$$y = 2x + 1$$



Score 3: The student has a complete and correct response.

Question 34

34 Solve the following system of equations algebraically for all values of x and y.

$$y = x^2 + 2x - 8$$
$$y = 2x + 1$$

$x^2 + 2x - 8 = 2x + 1$

$x^2 - 9 = 0$

$x^2 = 9$

$x = 3$

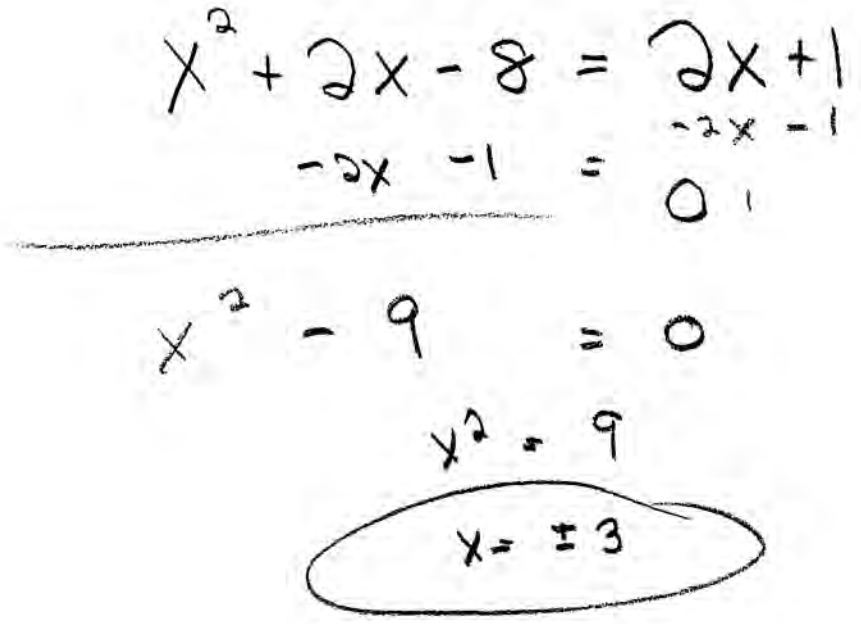
$x = 3 \quad y = 2(3) + 1 = 7$ $(3, 7)$

Score 2: The student found only one pair of values for x and y.

Question 34

34 Solve the following system of equations algebraically for all values of x and y.

$$y = x^2 + 2x - 8$$
$$y = 2x + 1$$



Score 2: The student showed correct work, but only found the x-values.

Question 34

34 Solve the following system of equations algebraically for all values of x and y.

$$y = x^2 + 2x - 8$$
$$y = 2x + 1$$

$x^2 + 2x - 8 = 2x + 1$

$-1 \quad -1$

$x^2 + 2x - 9 = 2x$

$-2x \quad -2x$

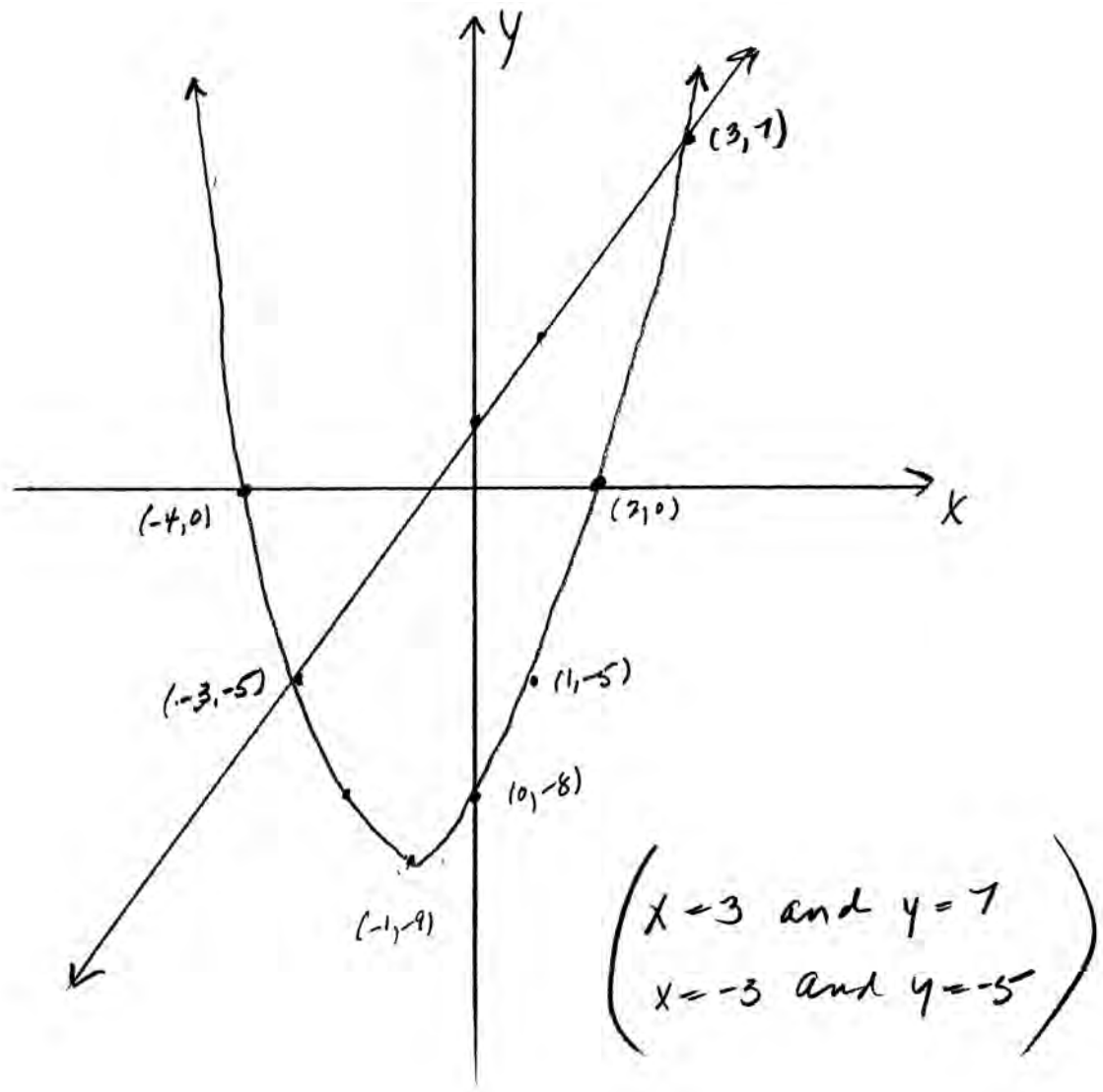
$x^2 - 9 = 0$

Score 1: The student showed correct work to find $x^2 - 9 = 0$, but showed no further correct work.

Question 34

34 Solve the following system of equations algebraically for all values of x and y.

$$y = x^2 + 2x - 8$$
$$y = 2x + 1$$



Score 1: The student found the correct answer using a graphical method.

Question 34

34 Solve the following system of equations algebraically for all values of x and y.

$$y = x^2 + 2x - 8$$
$$y = 2x + 1$$

$Y = x^2 + 2x - 8$

$Y = (x+4)(x-2)$

$Y = 2x - 2$

$+2 \quad +2$

$\frac{2y}{2} = \frac{2x}{2}$

$y = 2x + 1$ $\quad$ $Y = x$

$-y = 2x$

Score 0: The student wrote incorrect and irrelevant work.

Question 34

34 Solve the following system of equations algebraically for all values of x and y.

$$y = x^2 + 2x - 8$$
$$y = 2x + 1$$

$x^2 + 2x - 8 = 2x + 1$

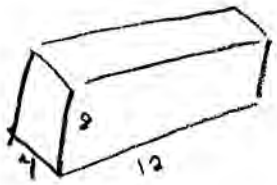
$+2x + 1 \qquad +2 \quad +1$

$x^2 + 4x - 7 = 0$

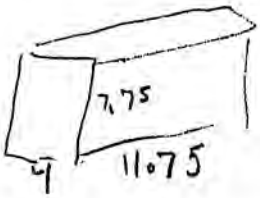
Score 0: The student made one conceptual error and showed no further correct work to find the appropriate values.

Question 35

35 A storage container in the form of a rectangular prism is measured to be 12 inches by 8 inches by 4 inches. Its actual measurements are 11.75 inches by 7.75 inches by 4 inches. Find the relative error in calculating the volume of the container, to the *nearest thousandth*.



$V = 4 \cdot 8 \cdot 12 = 384 \text{ cu. in}$



$V = 4 \cdot 7.5 \cdot 11.75 = 364.25$

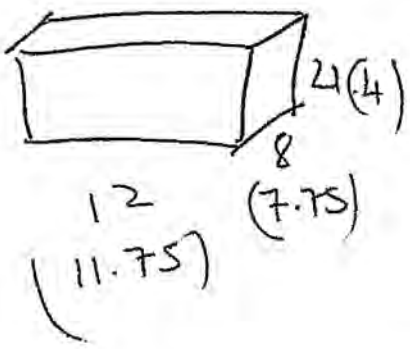
$$\frac{384 - 364.25}{364.25} = \frac{19.75}{364.25} = .054221002$$

.054

Score 3: The student has a complete and correct response.

Question 35

35 A storage container in the form of a rectangular prism is measured to be 12 inches by 8 inches by 4 inches. Its actual measurements are 11.75 inches by 7.75 inches by 4 inches. Find the relative error in calculating the volume of the container, to the *nearest thousandth*.



$$\frac{(12 \cdot 8 \cdot 4) - (11.75 \cdot 7.75 \cdot 4)}{(11.75 \cdot 7.75 \cdot 4)} \approx$$

≈ 0.054

Score 3: The student has a complete and correct response.

Question 35

35 A storage container in the form of a rectangular prism is measured to be 12 inches by 8 inches by 4 inches. Its actual measurements are 11.75 inches by 7.75 inches by 4 inches. Find the relative error in calculating the volume of the container, to the *nearest thousandth*.

$V = lwh$
$= 12 \cdot 8 \cdot 4$
$= 384$

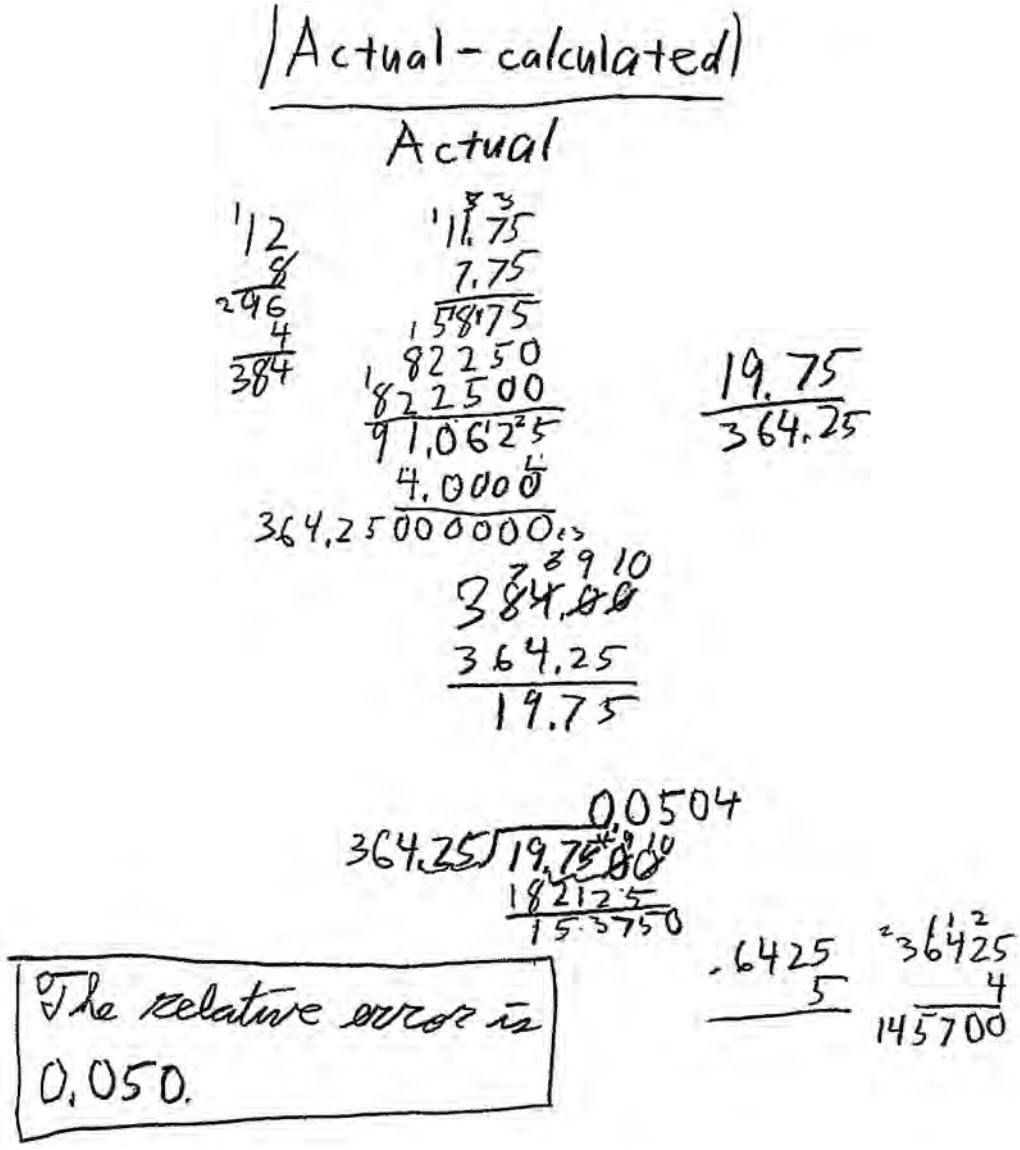
$V = lwh$
$= 11.75 \cdot 7.75 \cdot 4$
$= 364$

$\frac{384 - 364}{364} = .055$

Score 2: The student made one error by prematurely rounding when computing the actual volume.

Question 35

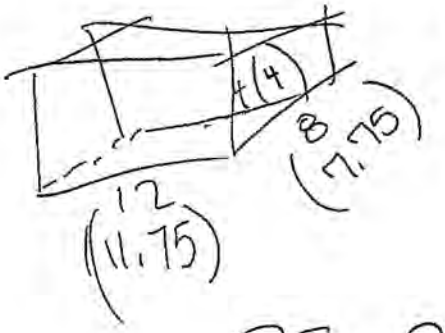
35 A storage container in the form of a rectangular prism is measured to be 12 inches by 8 inches by 4 inches. Its actual measurements are 11.75 inches by 7.75 inches by 4 inches. Find the relative error in calculating the volume of the container, to the *nearest thousandth*.



Score 2: The student made one computational error.

Question 35

35 A storage container in the form of a rectangular prism is measured to be 12 inches by 8 inches by 4 inches. Its actual measurements are 11.75 inches by 7.75 inches by 4 inches. Find the relative error in calculating the volume of the container, to the *nearest thousandth*.



$V' = lwh$ $V^2 = lwh$

$V' = 12 \cdot 8 \cdot 4$ $V^2 = 11.75 \cdot 7.75 \cdot 4$

$V' = 384$ $V^2 = 364.25$

$$RE = \frac{384 - 364.25}{364.25} \times 100$$

$$RE = \frac{19.75}{364.25} \times 100$$

$$RE = 5.422$$

Score 2: The student made one error by giving the answer as a percent by mutiplying by 100.

Question 35

35 A storage container in the form of a rectangular prism is measured to be 12 inches by 8 inches by 4 inches. Its actual measurements are 11.75 inches by 7.75 inches by 4 inches. Find the relative error in calculating the volume of the container, to the *nearest thousandth*.

$V = 2lh + 2lw + 2wh$ $l=12$ $h=8$ $w=4$

$2 \cdot 12 \cdot 8 + 2 \cdot 12 \cdot 4 + 2 \cdot 4 \cdot 8$

352.000

$V = 2lh + 2lw + 2wh$ $l=11.75$ $h=7.75$ $w=4.00$

$2 \cdot 11.75 \cdot 7.75 + 2 \cdot 11.75 \cdot 4 + 2 \cdot 4 \cdot 7.75$

338.125

$RE = \frac{m-a}{a}$

$RE = \frac{352 - 338.125}{338.125}$

$RE = .041$

Score 1: The student made one conceptual error by finding the relative error of the surface area.

Question 35

35 A storage container in the form of a rectangular prism is measured to be 12 inches by 8 inches by 4 inches. Its actual measurements are 11.75 inches by 7.75 inches by 4 inches. Find the relative error in calculating the volume of the container, to the *nearest thousandth*.

$V = lwh$
$= 12 \cdot 8 \cdot 4$
$= 384$

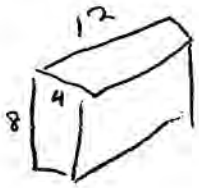
$V = 11.75 \cdot 7.75 \cdot 4$
$= 304$

$$\frac{384 - 304}{384} = \frac{20}{384} = .052$$

Score 0: The student made one conceptual error by dividing by 384 and one error by prematurely rounding.

Question 35

35 A storage container in the form of a rectangular prism is measured to be 12 inches by 8 inches by 4 inches. Its actual measurements are 11.75 inches by 7.75 inches by 4 inches. Find the relative error in calculating the volume of the container, to the *nearest thousandth*.



$2(4 \cdot 8) + 2(12 \cdot 4) + 2(12 \cdot 8) = 352$

$2(4 \cdot 7.75) + 2(4 \cdot 11.75) + 2(7.75 \cdot 11.75) = 338.125$

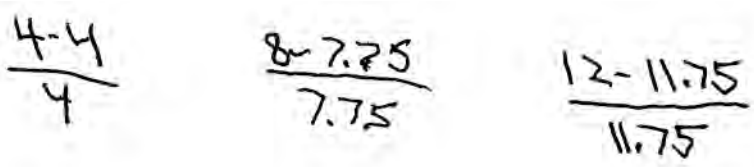
$$\frac{352 - 338.125}{352}$$

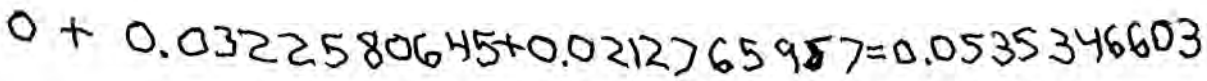
.039

Score 0: The student made two conceptual errors by using the surface area and dividing by 352.

Question 35

35 A storage container in the form of a rectangular prism is measured to be 12 inches by 8 inches by 4 inches. Its actual measurements are 11.75 inches by 7.75 inches by 4 inches. Find the relative error in calculating the volume of the container, to the *nearest thousandth*.





Score 0: The student obtained a correct answer by an obviously incorrect procedure.

Question 36

36 Perform the indicated operations and express the answer in simplest radical form.

$$3\sqrt{7}\left(\sqrt{14}+4\sqrt{56}\right)$$

$3\sqrt{7}(\sqrt{14}+8\sqrt{14})$

$3\sqrt{7}(9\sqrt{14})$

$189\sqrt{2}$

Score 3: The student has a complete and correct response.

Question 36

36 Perform the indicated operations and express the answer in simplest radical form.

$3\sqrt{7}\left(\sqrt{14}+4\sqrt{56}\right)$

$3\sqrt{98} + 12\sqrt{392}$

$3\sqrt{16\cdot 6} + 12\sqrt{4\cdot 98}$

$12\sqrt{6} + 24\sqrt{98}$

$12\sqrt{6} + 24\sqrt{16\cdot 6}$

$12\sqrt{6} + 96\sqrt{6}$

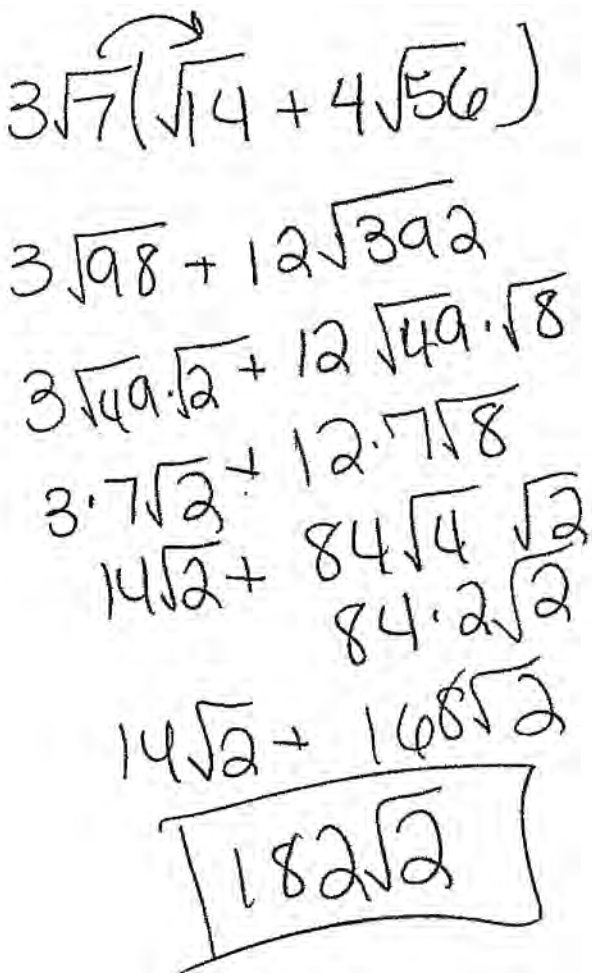
$108\sqrt{6}$

Score 2: The student made one computational error in factoring 98 as 6 • 16, but wrote an appropriate answer in simplest radical form.

Question 36

36 Perform the indicated operations and express the answer in simplest radical form.

$$3\sqrt{7}\left(\sqrt{14}+4\sqrt{56}\right)$$

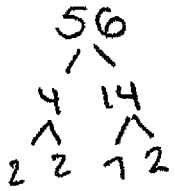


Score 2: The student made one computational error, but wrote an appropriate answer in simplest radical form.

Question 36

36 Perform the indicated operations and express the answer in simplest radical form.

$$3\sqrt{7}\left(\sqrt{14}+4\sqrt{56}\right)$$



$3\sqrt{7}(\sqrt{14}+4\sqrt{56})$

$3\sqrt{7}(\sqrt{14}+4\sqrt{4}\sqrt{14})$

$3\sqrt{7}(\sqrt{14}+4(2)\sqrt{14})$

$3\sqrt{7}(\sqrt{14}+8\sqrt{14})$

$3\sqrt{7}(9\sqrt{14})$

$3\sqrt{7}(9\sqrt{7}\sqrt{2})$

$27\sqrt{7}(\sqrt{2})$

Score 2: The student made one computational error when multiplying $\sqrt{7} \cdot \sqrt{7}$.

Question 36

36 Perform the indicated operations and express the answer in simplest radical form.

$$3\sqrt{7}\left(\sqrt{14}+4\sqrt{56}\right)$$

$3\sqrt{7}(\sqrt{7\cdot2}+4\sqrt{8\cdot7})$

$3\sqrt{7}(2\sqrt{7\cdot2}+4\sqrt{4\cdot2\cdot7})$

$3\sqrt{7}(\sqrt{7\cdot2}+8\sqrt{7\cdot2})$

$3\sqrt{7}(8\sqrt{7\cdot2})$

$3\sqrt{7}(8\sqrt{14})$

$24\sqrt{98}$

$24\sqrt{2\cdot49}$

$24\sqrt{2\cdot7\cdot7}$

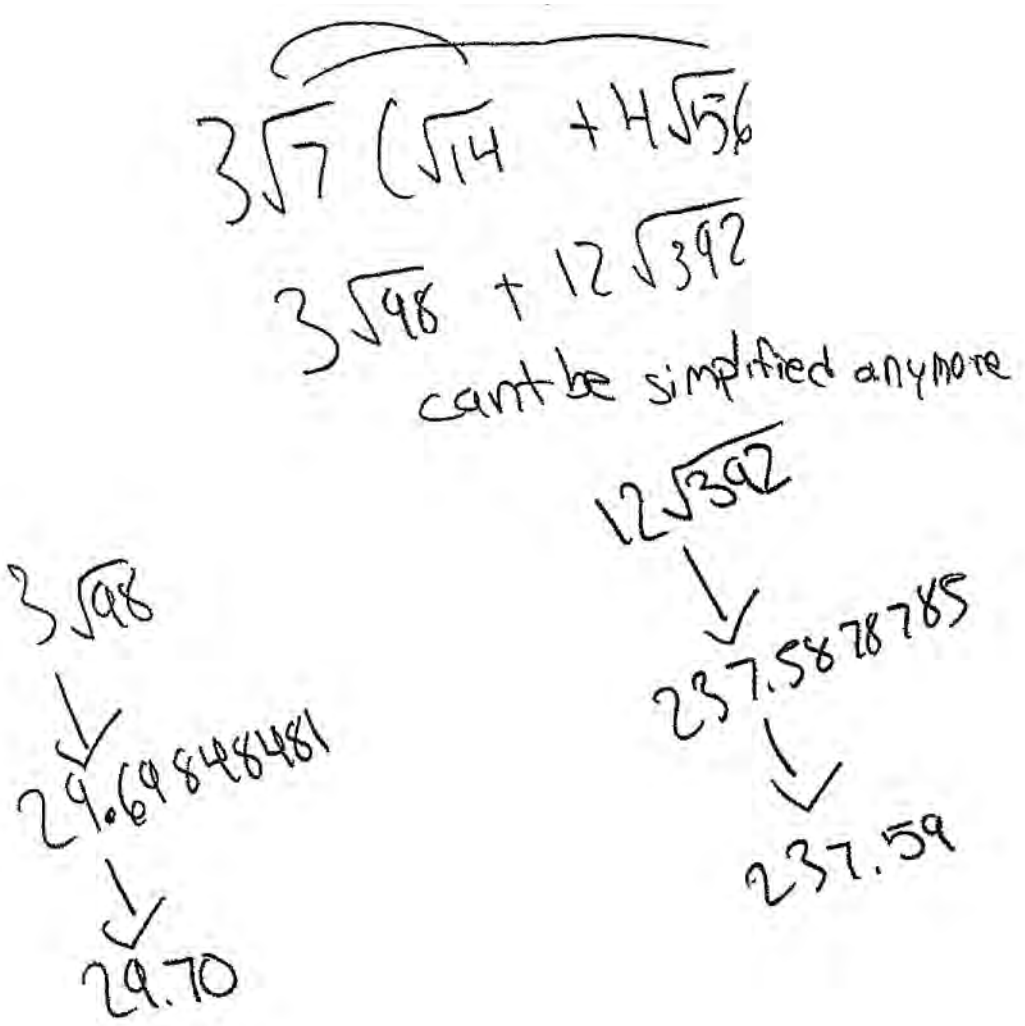
$169\sqrt{2}$

Score 1: The student made two computational errors: $\sqrt{7\bullet2}+8\sqrt{7\bullet2}=8\sqrt{7\bullet2}$ and then $7\bullet24=169$.

Question 36

36 Perform the indicated operations and express the answer in simplest radical form.

$$3\sqrt{7}\left(\sqrt{14}+4\sqrt{56}\right)$$

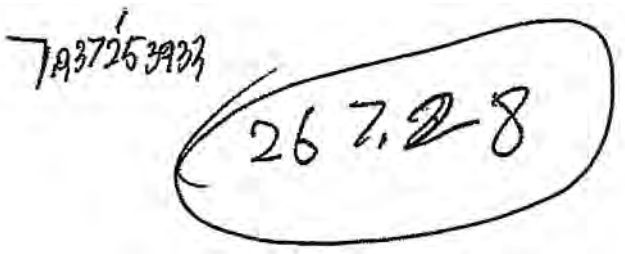


Score 1: The student showed correct work to find $3\sqrt{98}$ and $12\sqrt{392}$, but showed no further correct work.

Question 36

36 Perform the indicated operations and express the answer in simplest radical form.

$$3\sqrt{7}\left(\sqrt{14}+4\sqrt{56}\right)$$



Score 0: The student expressed the answer as a decimal, only.

Question 36

36 Perform the indicated operations and express the answer in simplest radical form.

$$3\sqrt{7}\left(\sqrt{14}+4\sqrt{56}\right)$$

$3\sqrt{21} + 12\sqrt{63}$

$3\sqrt{21} + 12 \cdot 3\sqrt{7}$

$3\sqrt{21} + 26\sqrt{7}$

$29\sqrt{28}$

$58\sqrt{7}$

Score 0: The student wrote a completely incorrect response.

Question 37

37 During its first week of business, a market sold a total of 108 apples and oranges. The second week, five times the number of apples and three times the number of oranges were sold. A total of 452 apples and oranges were sold during the second week. Determine how many apples and how many oranges were sold the *first* week. [Only an algebraic solution can receive full credit.]

apples = x = 64
oranges = y = 44

$1x + y = 108$
$-1x \quad -1x$

$5x + 3y = 452$
$-5x$

$y = \frac{452 - 5x}{3}$

$\frac{108 - x}{1} = \frac{452 - 5x}{3}$

$3(108 - x) = 452 - 5x$

$324 - 3x = 452 - 5x$
$-324 + 5x \quad -324 + 5x$

$\frac{2x = 128}{2 \quad 2}$

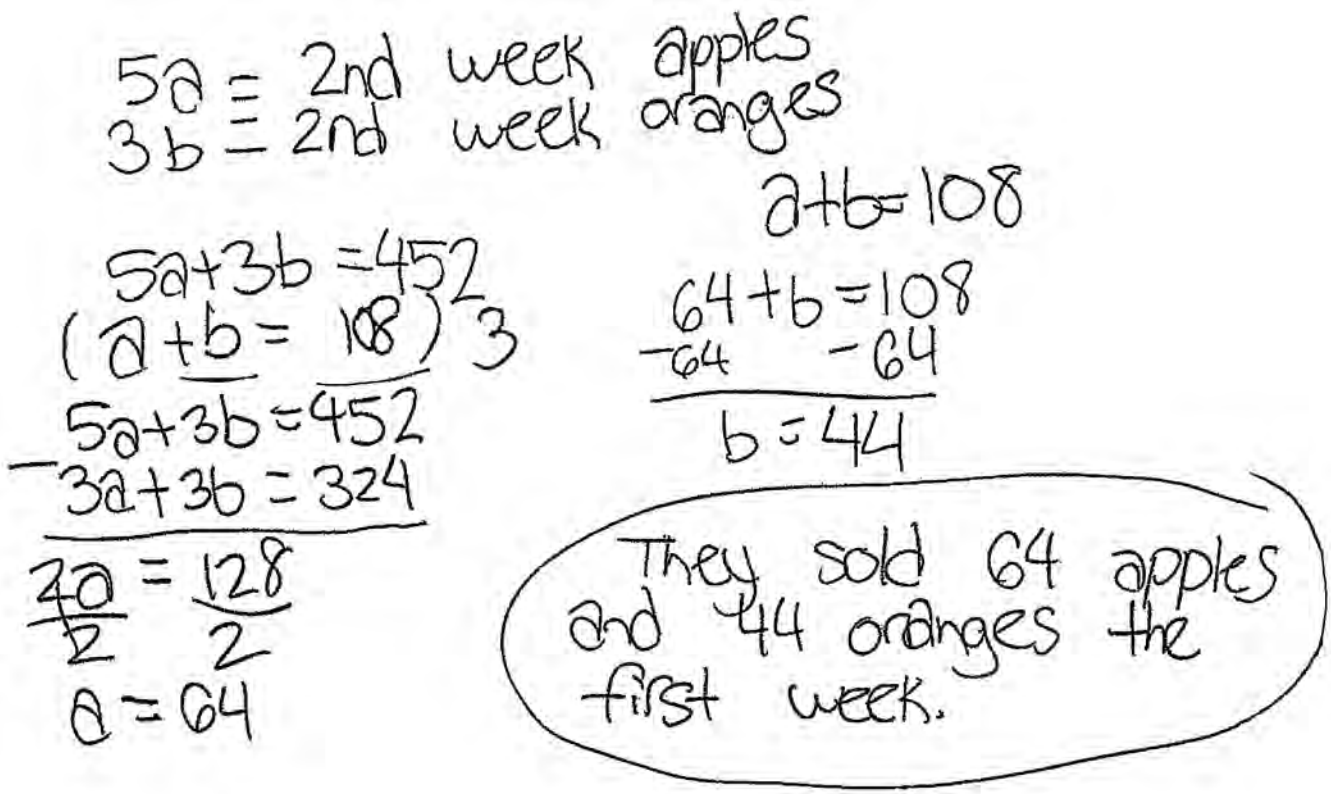
$x = 64$

$108 - 64 = 44$

Score 4: The student has a complete and correct response.

Question 37

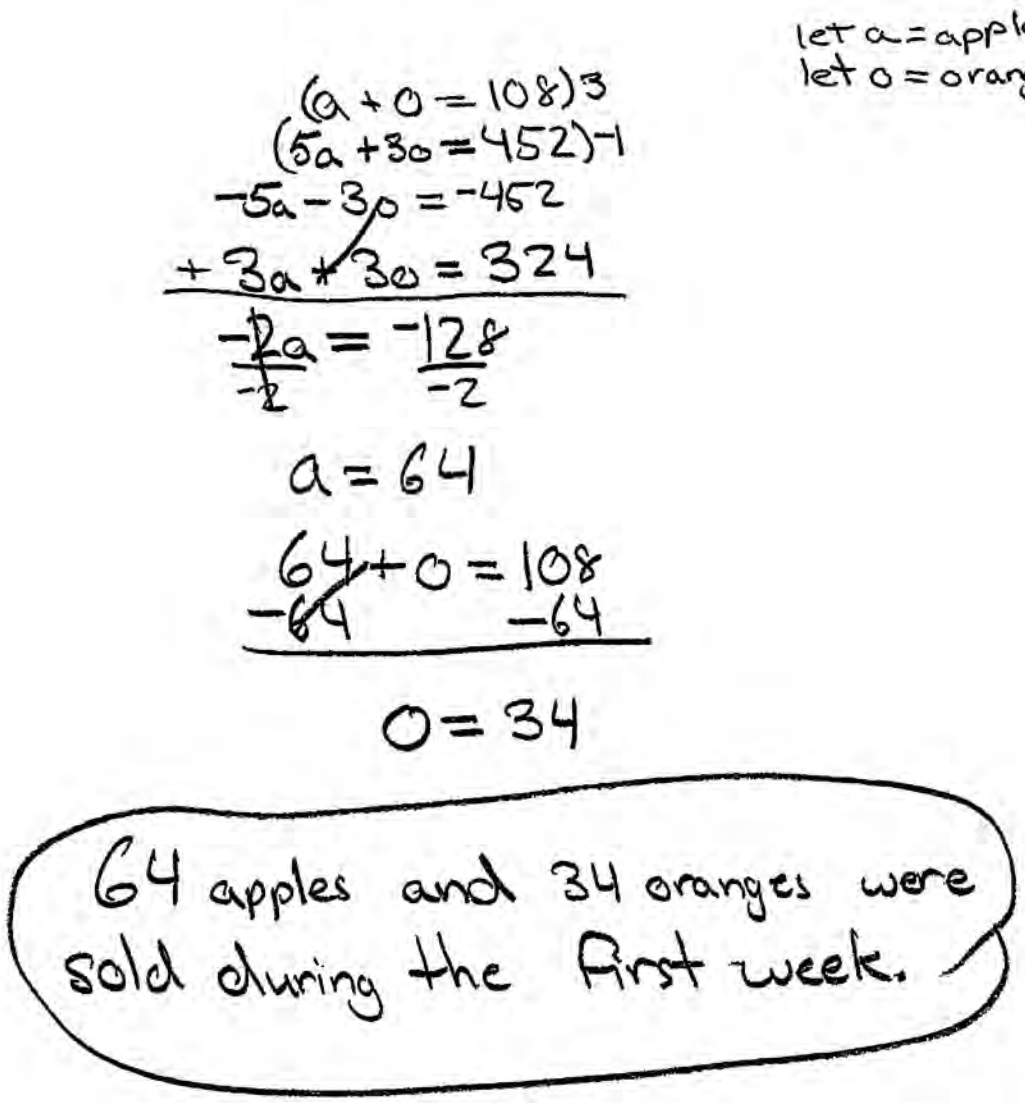
37 During its first week of business, a market sold a total of 108 apples and oranges. The second week, five times the number of apples and three times the number of oranges were sold. A total of 452 apples and oranges were sold during the second week. Determine how many apples and how many oranges were sold the *first* week. [Only an algebraic solution can receive full credit.]



Score 4: The student has a complete and correct response.

Question 37

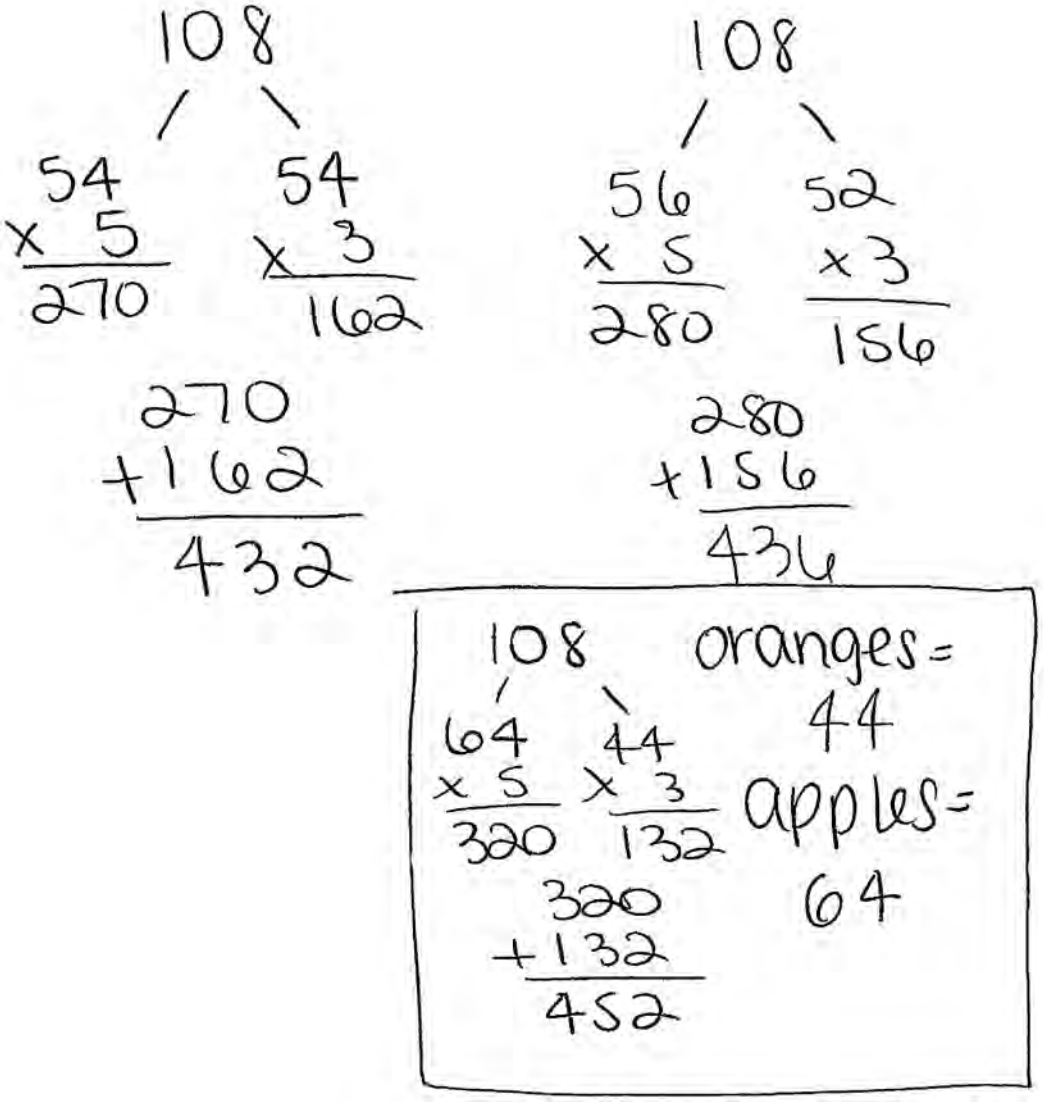
37 During its first week of business, a market sold a total of 108 apples and oranges. The second week, five times the number of apples and three times the number of oranges were sold. A total of 452 apples and oranges were sold during the second week. Determine how many apples and how many oranges were sold the *first* week. [Only an algebraic solution can receive full credit.]



Score 3: The student made one computational error in subtracting 64 from 108.

Question 37

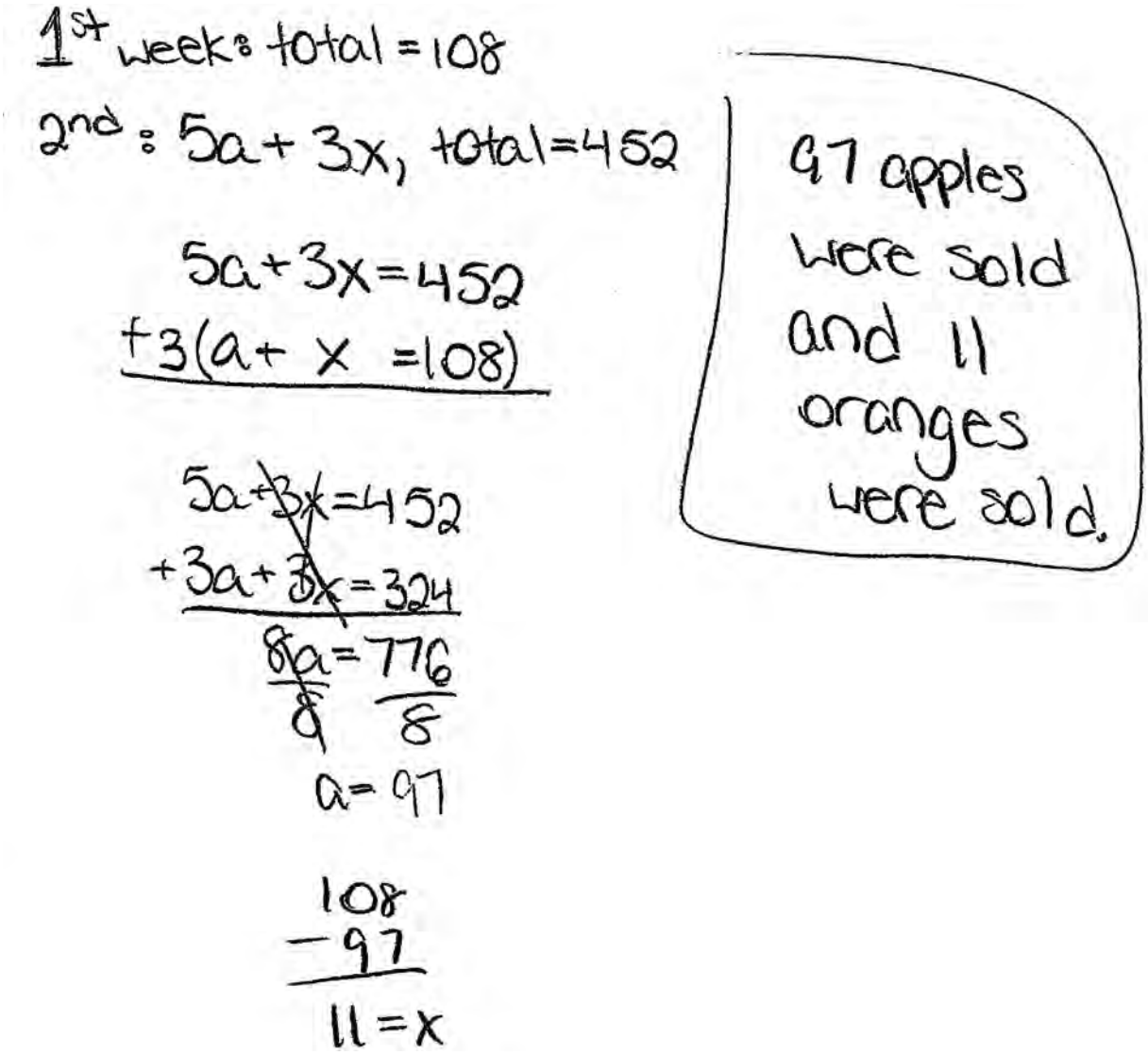
37 During its first week of business, a market sold a total of 108 apples and oranges. The second week, five times the number of apples and three times the number of oranges were sold. A total of 452 apples and oranges were sold during the second week. Determine how many apples and how many oranges were sold the *first* week. [Only an algebraic solution can receive full credit.]



Score 2: The student used a method other than algebraic to find the number of apples and oranges.

Question 37

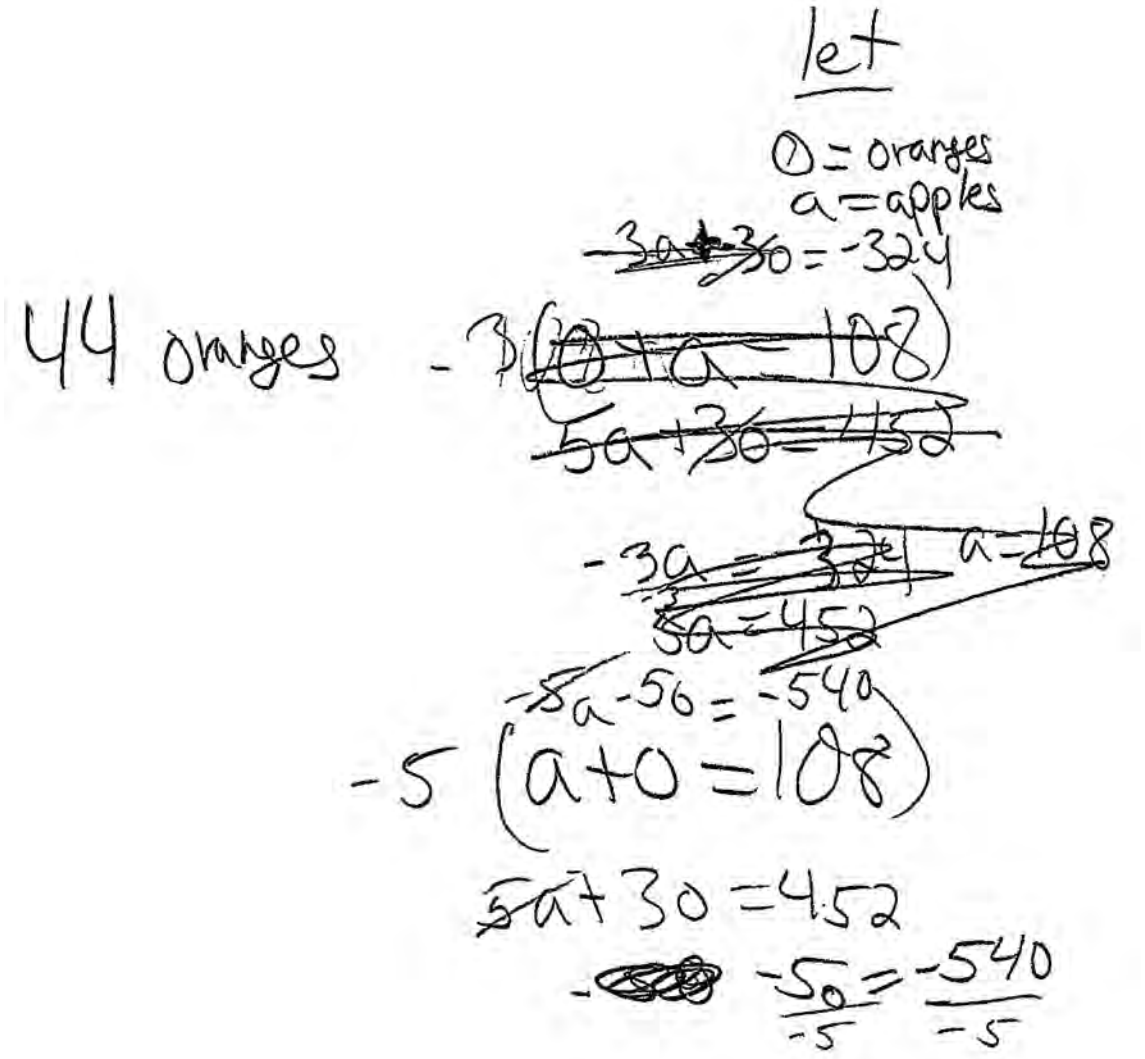
37 During its first week of business, a market sold a total of 108 apples and oranges. The second week, five times the number of apples and three times the number of oranges were sold. A total of 452 apples and oranges were sold during the second week. Determine how many apples and how many oranges were sold the *first* week. [Only an algebraic solution can receive full credit.]



Score 2: The student made one conceptual error in solving the system of equations.

Question 37

37 During its first week of business, a market sold a total of 108 apples and oranges. The second week, five times the number of apples and three times the number of oranges were sold. A total of 452 apples and oranges were sold during the second week. Determine how many apples and how many oranges were sold the *first* week. [Only an algebraic solution can receive full credit.]



Score 1: The student wrote a correct system of equations, but showed no further correct work.

Question 37

37 During its first week of business, a market sold a total of 108 apples and oranges. The second week, five times the number of apples and three times the number of oranges were sold. A total of 452 apples and oranges were sold during the second week. Determine how many apples and how many oranges were sold the *first* week. [Only an algebraic solution can receive full credit.]

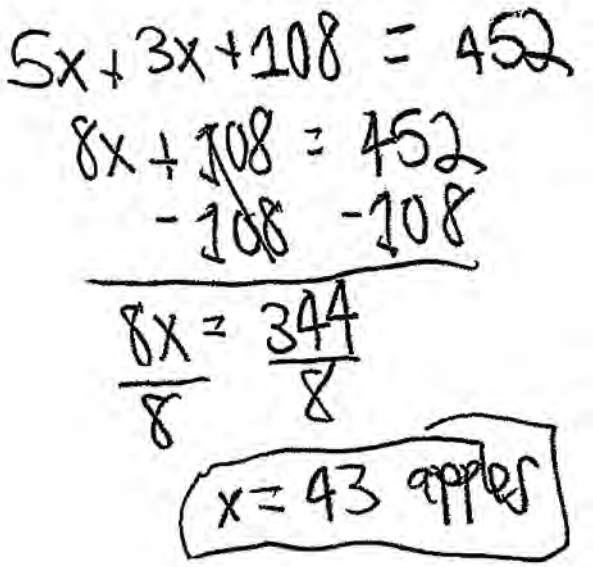
Let x = apples
y = oranges

$x + y = 108$
$5x + 3y = 452$
$6x + 4y = 560$

Score 1: The student wrote a correct system of equations.

Question 37

37 During its first week of business, a market sold a total of 108 apples and oranges. The second week, five times the number of apples and three times the number of oranges were sold. A total of 452 apples and oranges were sold during the second week. Determine how many apples and how many oranges were sold the *first* week. [Only an algebraic solution can receive full credit.]



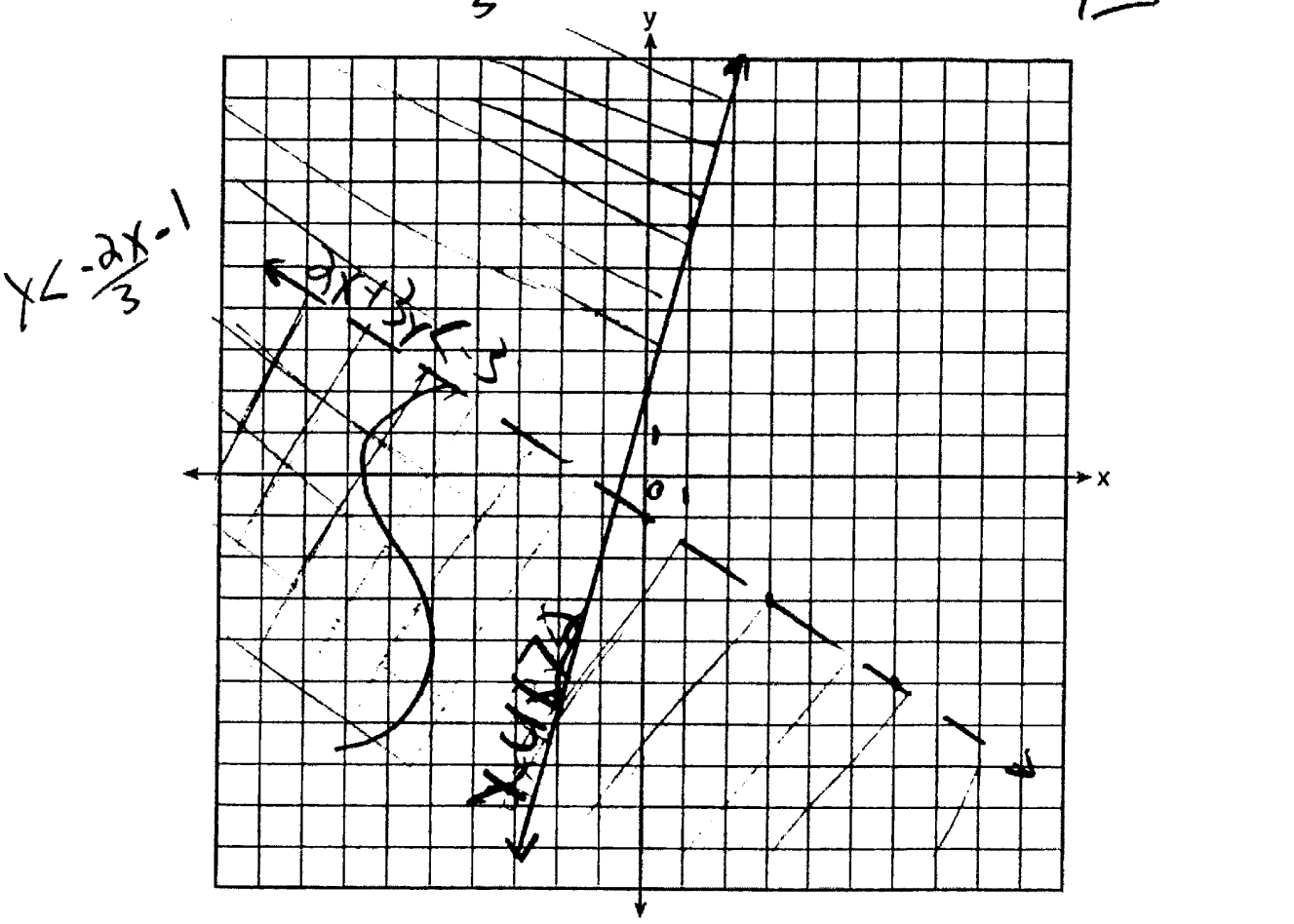
Score 0: The student wrote a completely incorrect response.

Question 38

38 On the set of axes below, solve the following system of inequalities graphically.

Label the solution set S.

$$2x + 3y < -3$$
$$y - 4x \geq 2$$



Score 4: The student has a complete and correct response.

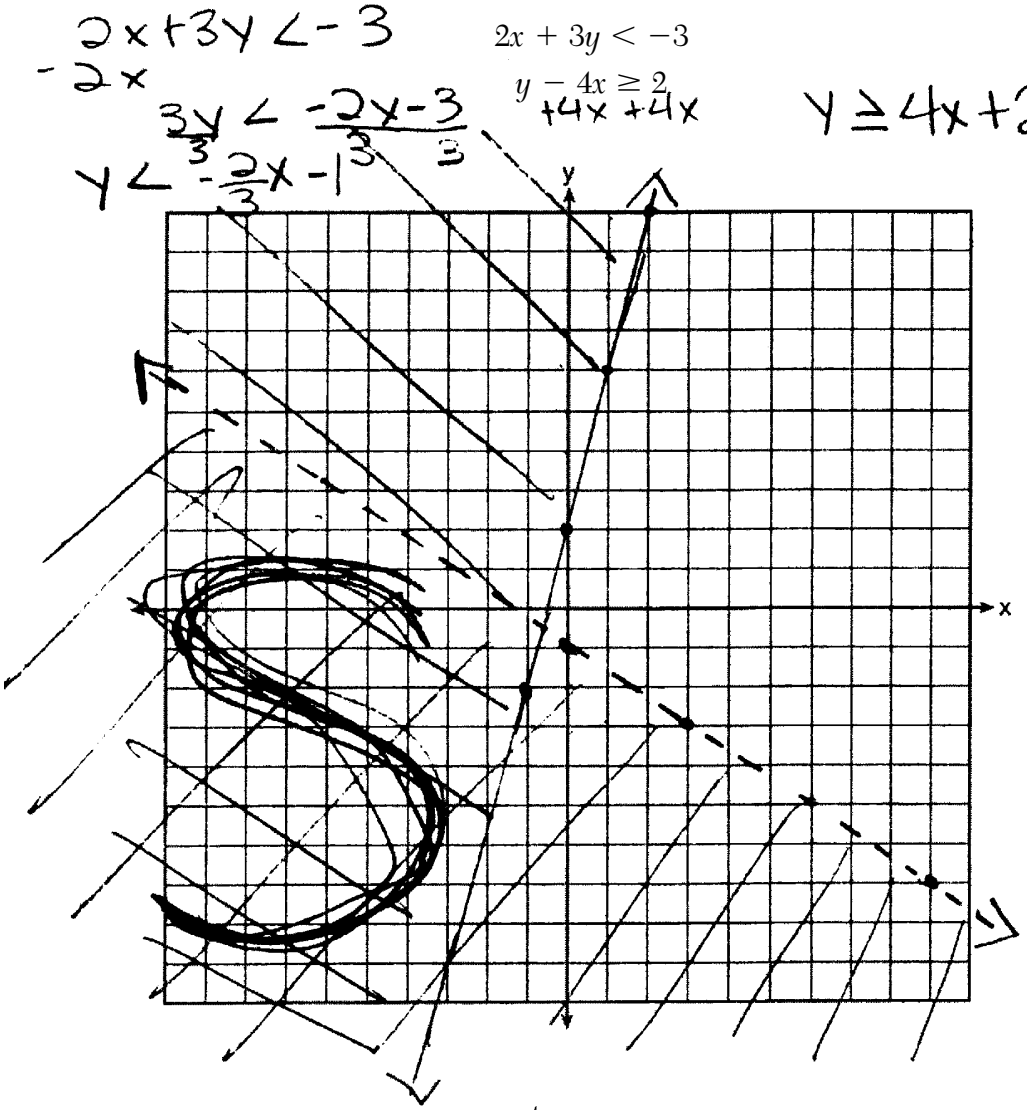
Question 38

38 On the set of axes below, solve the following system of inequalities graphically.

Label the solution set S.

$2x + 3y < -3$

$y - 4x \geq 2$



Score 3: The student did not label at least one graph.

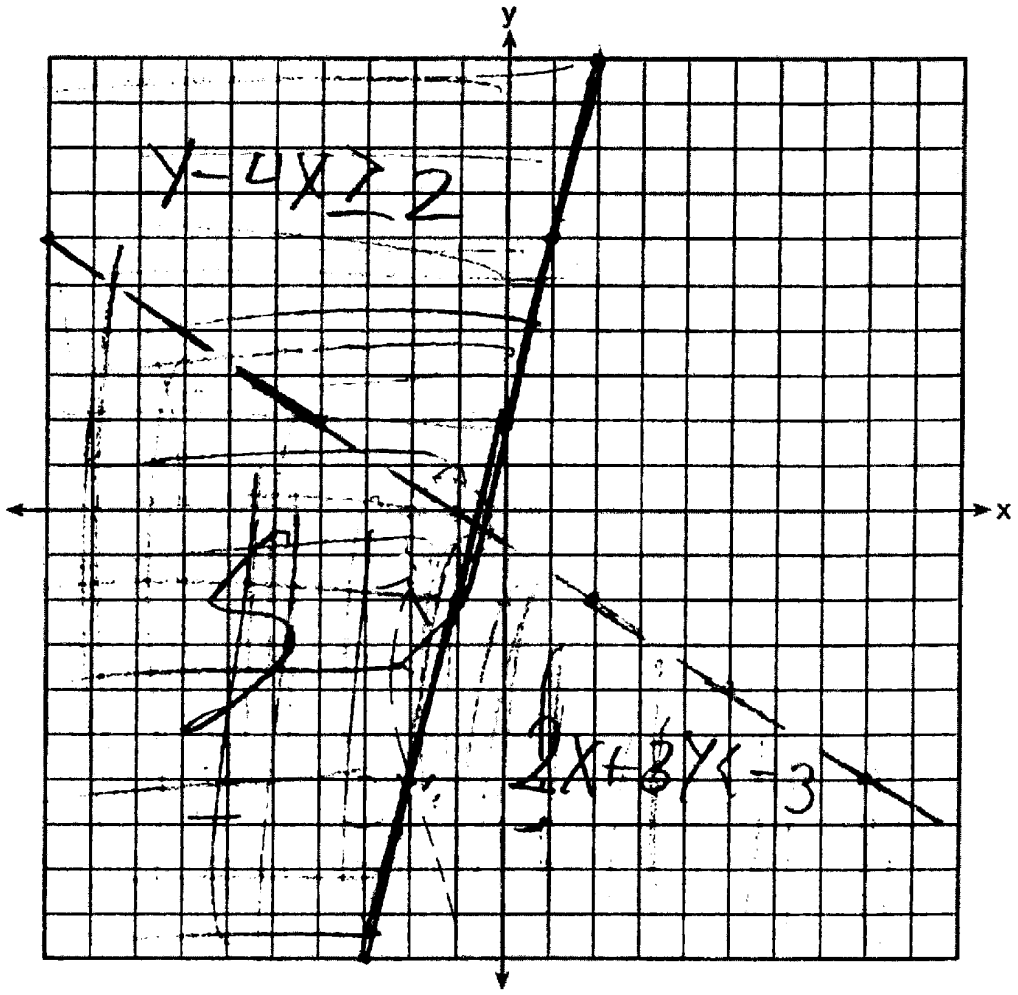
Question 38

38 On the set of axes below, solve the following system of inequalities graphically.

Label the solution set S.

$2x + 3y < -3$ $= \frac{3y}{3} < \frac{-2x}{3} - \frac{3}{3} = y < -\frac{2}{3}x - 1$

$y - 4x \geq 2$ $= y \geq 4x + 2$



Score 3: The student made one graphing error in graphing the y-intercept on the x-axis.

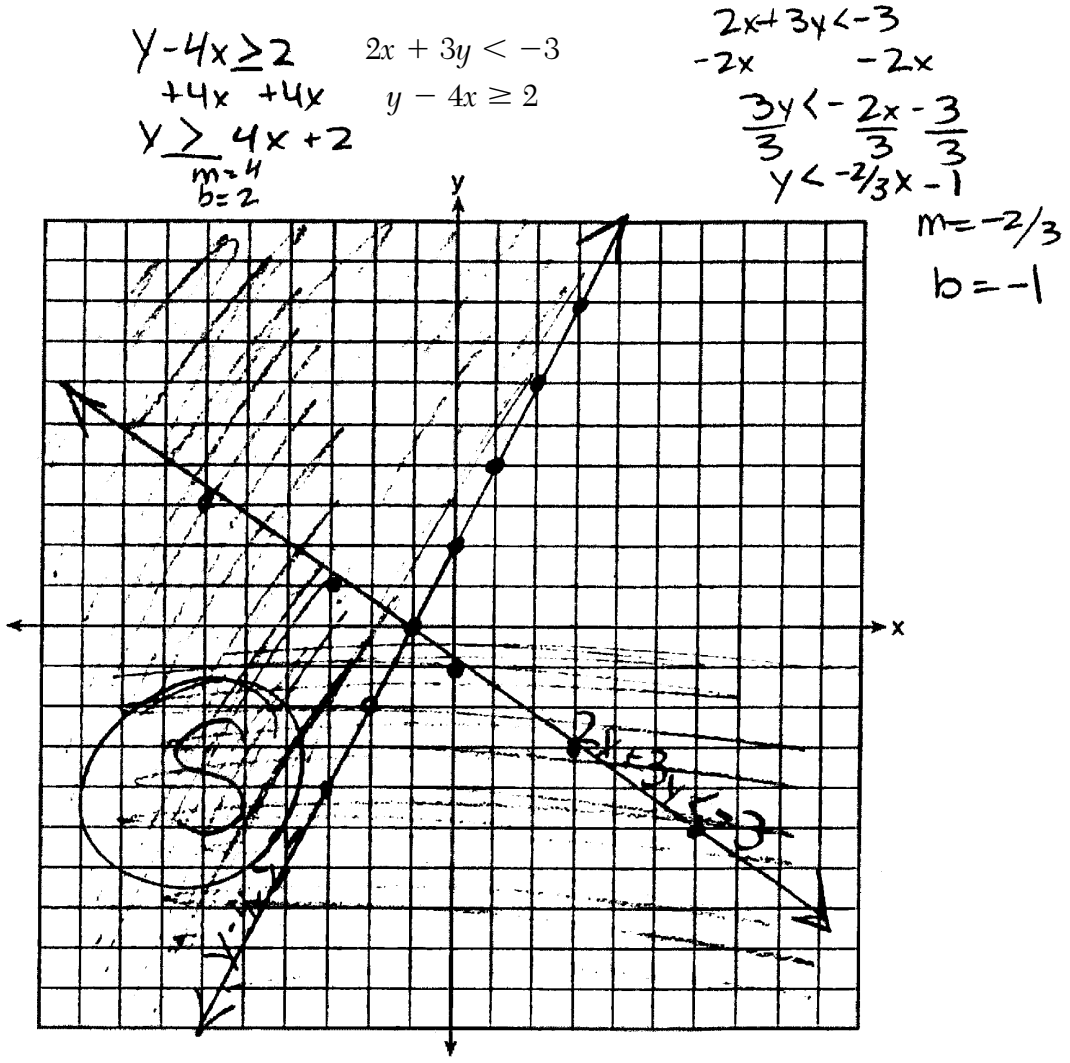
Question 38

38 On the set of axes below, solve the following system of inequalities graphically.

Label the solution set S.

$2x + 3y < -3$

$y - 4x \geq 2$



Score 2: The student made three graphing errors by drawing a solid line and shading incorrectly for $2x + 3y < -3$. The student graphed a slope of 2 instead of 4 for $4 - 4x > 2$.

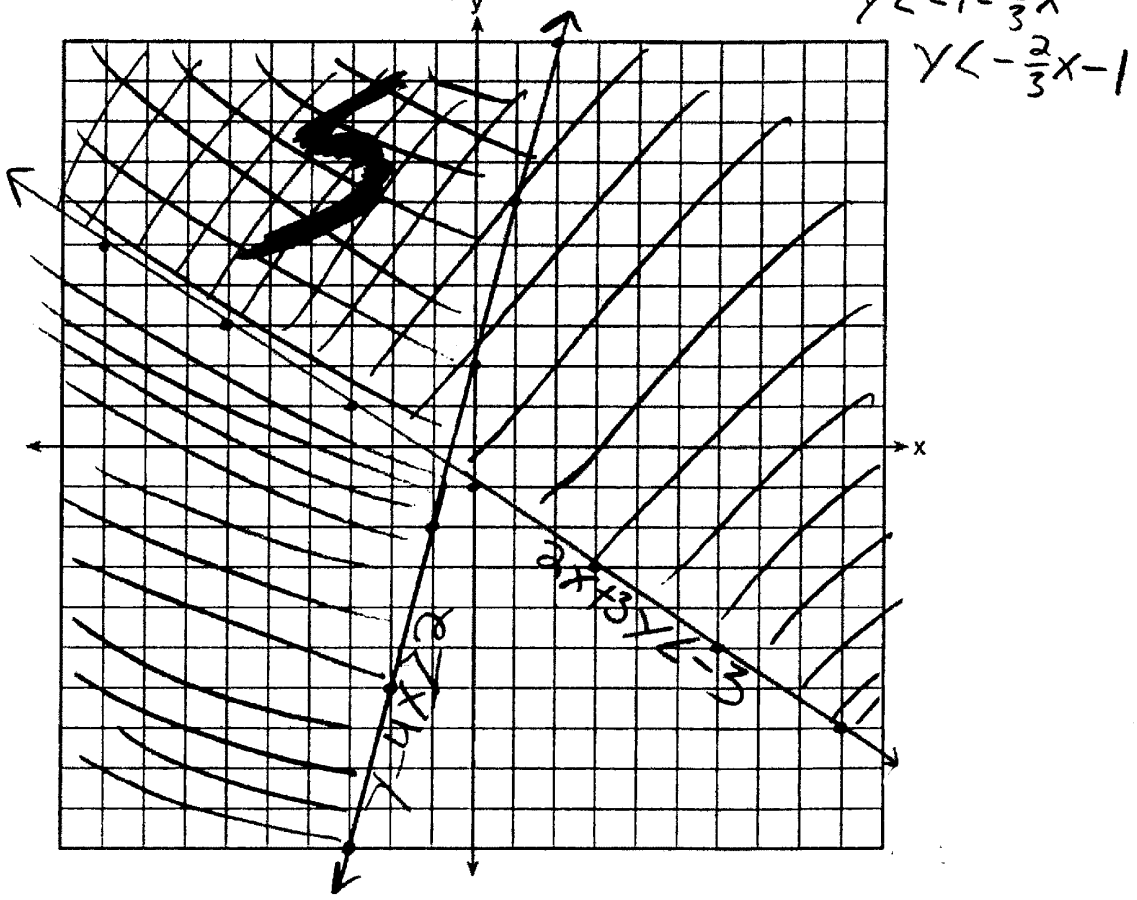
Question 38

38 On the set of axes below, solve the following system of inequalities graphically.

Label the solution set S.

$2x + 3y < -3$

$y - 4x \geq 2$



Score 2: The student made two graphing errors. The student used a solid line in graphing $2x + 3y < -3$ and also shaded incorrectly.

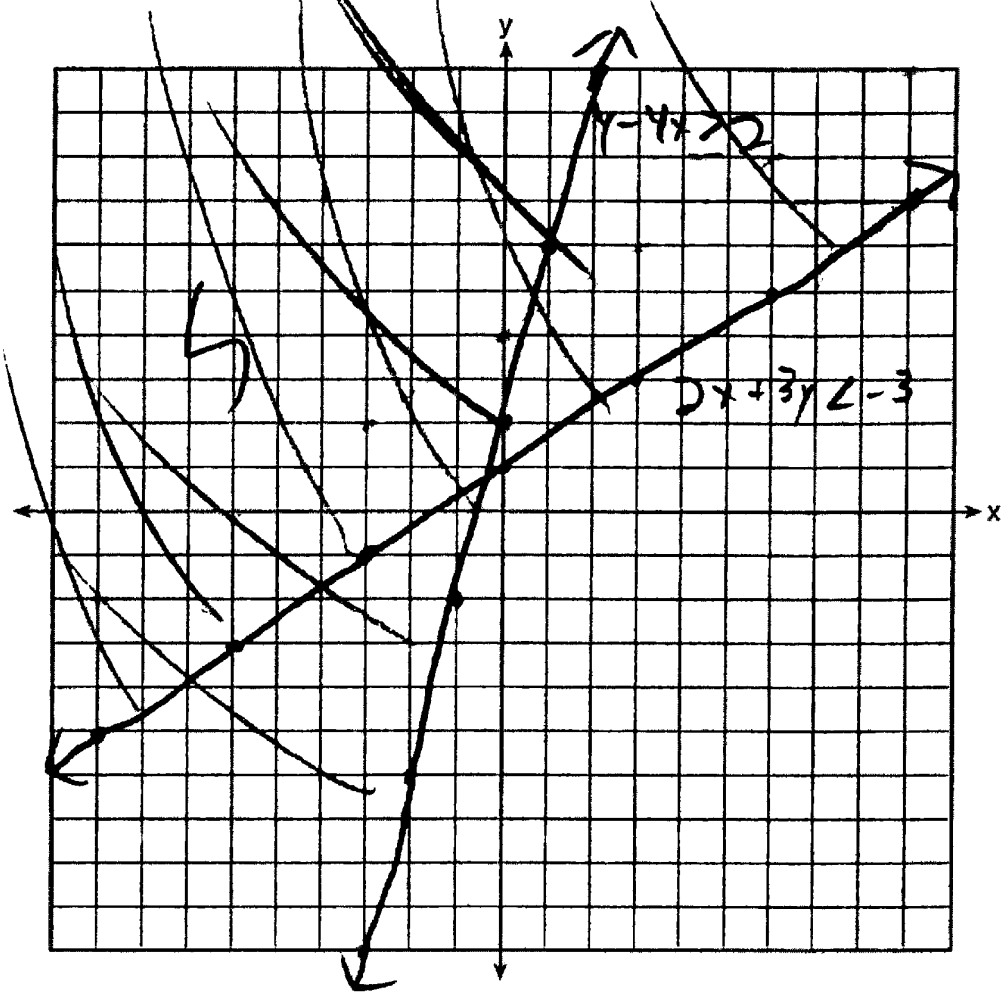
Question 38

38 On the set of axes below, solve the following system of inequalities graphically.

Label the solution set S.

$2x + 3y < -3$

$-x_y - 4x \geq 2$



Score 2: The student graphed, labeled, and shaded one inequality correctly.

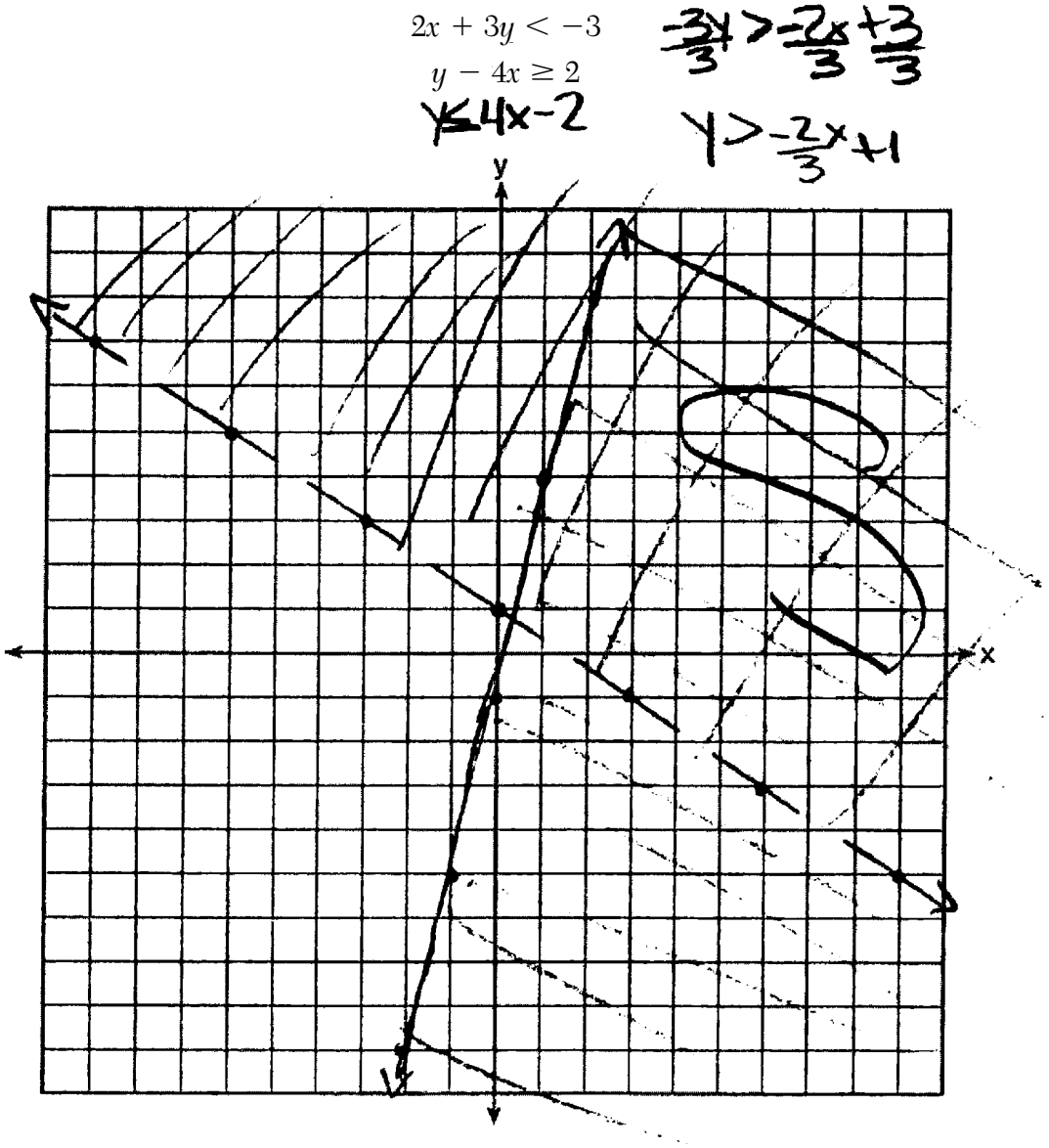
Question 38

38 On the set of axes below, solve the following system of inequalities graphically.

Label the solution set S.

$2x + 3y < -3$

$y - 4x \geq 2$

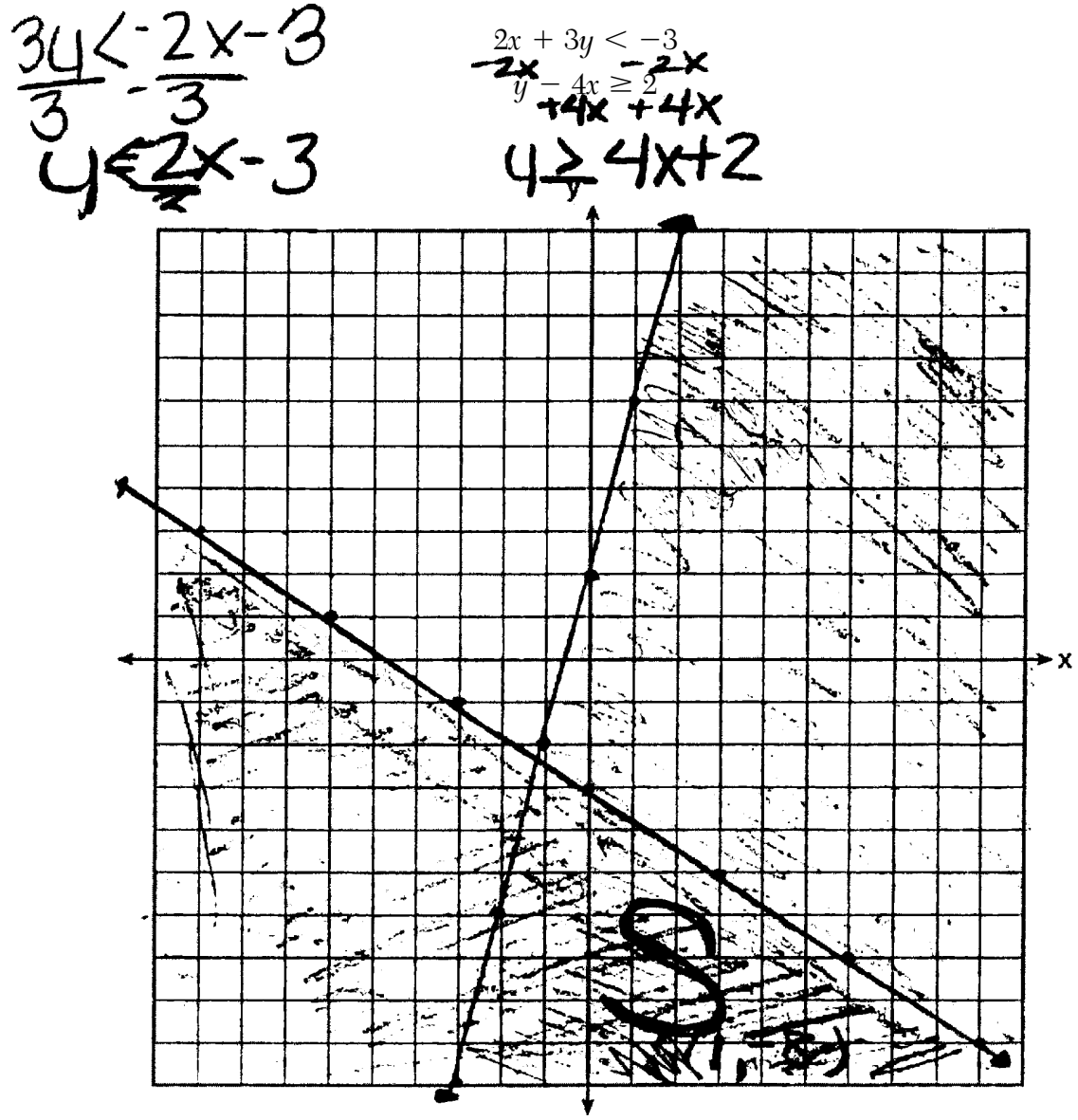


Score 0: The student gave a completely incorrect and incoherent response.

Question 38

38 On the set of axes below, solve the following system of inequalities graphically.

Label the solution set S.



Score 0: The student made one conceptual error in solving $2x + 3y < -3$. The student made a graphing error by drawing a solid line for $2x + 3y < -3$ and another graphing error by shading incorrectly for $y - 4x \geq 2$. Neither graph was labeled.

Question 39

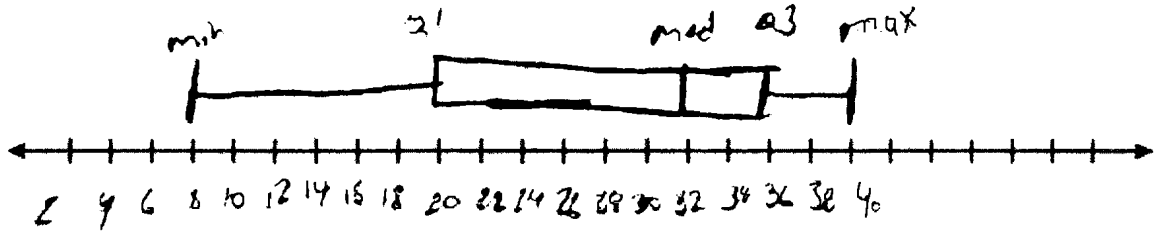
39 During the last 15 years of his baseball career, Andrew hit the following number of home runs each season.

35, 24, 32, 36, 40, 32, 40, 38, 36, 33, 11, 20, 19, 22, 8

State and label the values of the minimum, 1st quartile, median, 3rd quartile, and maximum.

min: 8
1st quartile: 20
median: 32
3rd quartile: 36
max: 40

Using the line below, construct a box-and-whisker plot for this set of data.

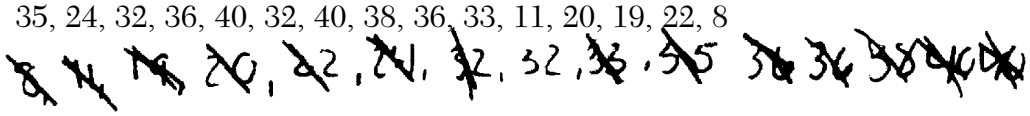


Score 4: The student has a complete and correct response.

Question 39

39 During the last 15 years of his baseball career, Andrew hit the following number of home runs each season.

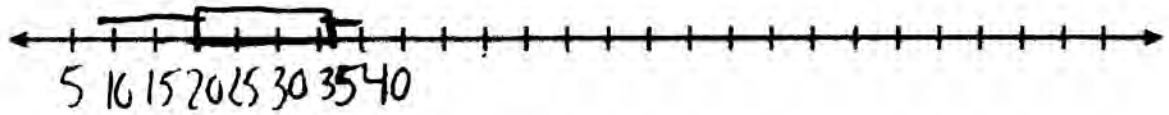
35, 24, 32, 36, 40, 32, 40, 38, 36, 33, 11, 20, 19, 22, 8



State and label the values of the minimum, 1st quartile, median, 3rd quartile, and maximum.

min 8
1 20
med 32
3 36
max 40

Using the line below, construct a box-and-whisker plot for this set of data.



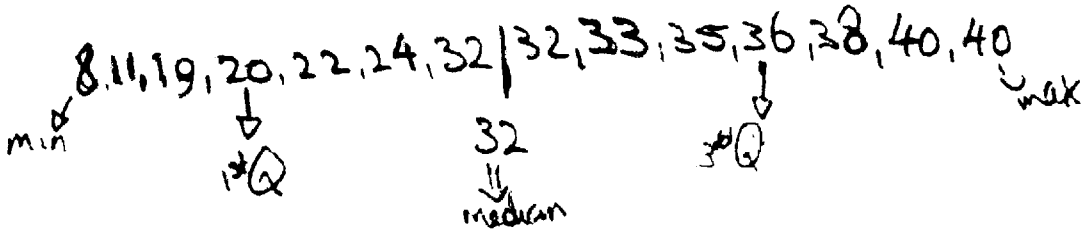
Score 3: The student did not correctly graph the median.

Question 39

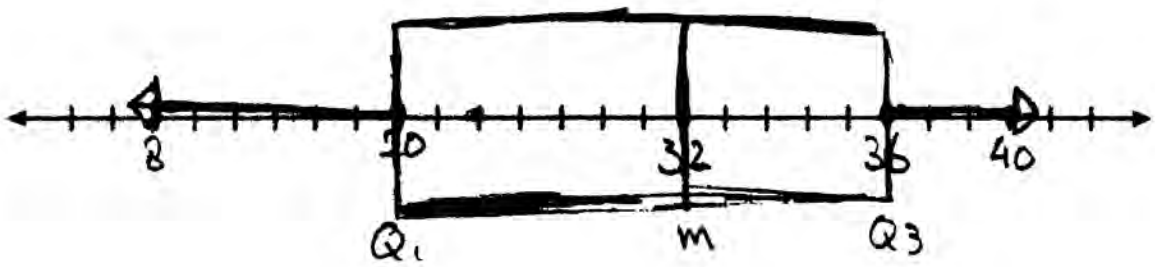
39 During the last 15 years of his baseball career, Andrew hit the following number of home runs each season.

35, 24, 32, 36, 40, 32, 40, 38, 36, 33, 11, 20, 19, 22, 8

State and label the values of the minimum, 1st quartile, median, 3rd quartile, and maximum.



Using the line below, construct a box-and-whisker plot for this set of data.



Score 2: The student stated an appropriate five-number summary, but excluded one value from the data. The student also made an incorrect box-and-whisker plot.

Question 39

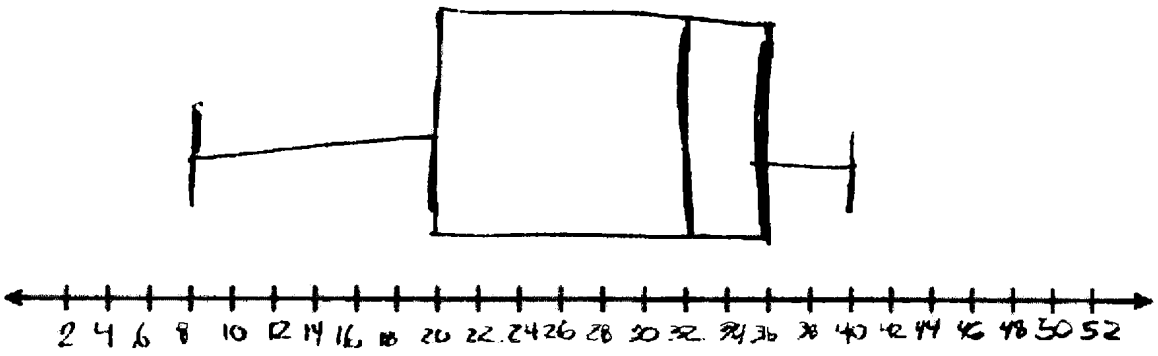
39 During the last 15 years of his baseball career, Andrew hit the following number of home runs each season.

35, 24, 32, 36, 40, 32, 40, 38, 36, 33, 11, 20, 19, 22, 8

8, 11, 19, 20, 22, 24, 32, 32, 33, 35, 36, 36, 38, 40, 40

State and label the values of the minimum, 1st quartile, median, 3rd quartile, and maximum.

Using the line below, construct a box-and-whisker plot for this set of data.



Score 2: The student drew a correct box-and-whisker plot, but did not state or label any values.

Question 39

39 During the last 15 years of his baseball career, Andrew hit the following number of home runs each season.

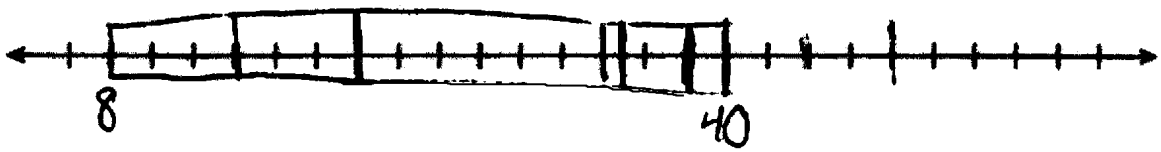
35, 24, 32, 36, 40, 32, 40, 38, 36, 33, 11, 20, 19, 22, 8

8, 11, 19, 20, 22, 24, 32, 32, 33, 35, 36, 36, 38, 40

State and label the values of the minimum, 1st quartile, median, 3rd quartile, and maximum.

minimum - 8
1st Quartile - 20
Median - 33
3rd Quartile - 38
Maximum - 40

Using the line below, construct a box-and-whisker plot for this set of data.



Score 1: The student stated and labeled three values and drew an incorrect box-and-whisker plot.

Question 39

39 During the last 15 years of his baseball career, Andrew hit the following number of home runs each season.

35, 24, 32, 36, 40, 32, 40, 38, 36, 33, 11, 20, 19, 22, 8

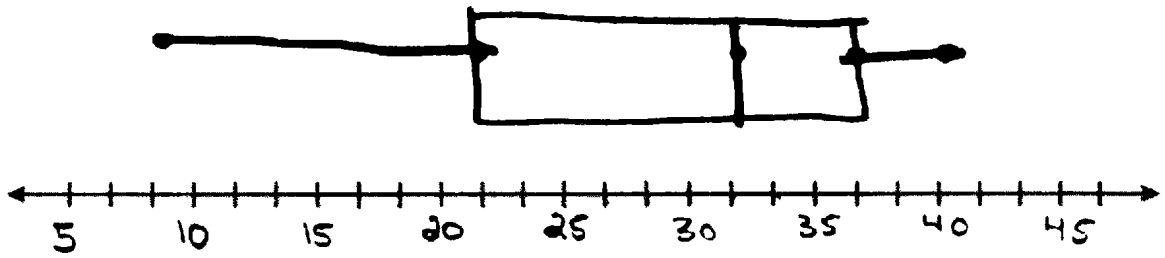
State and label the values of the minimum, 1st quartile, median, 3rd quartile, and maximum.

Mean - 32.5

Lower - 21

Upper - 26

Using the line below, construct a box-and-whisker plot for this set of data.



Score 0: The student wrote a completely incorrect response.