The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

INTEGRATED ALGEBRA

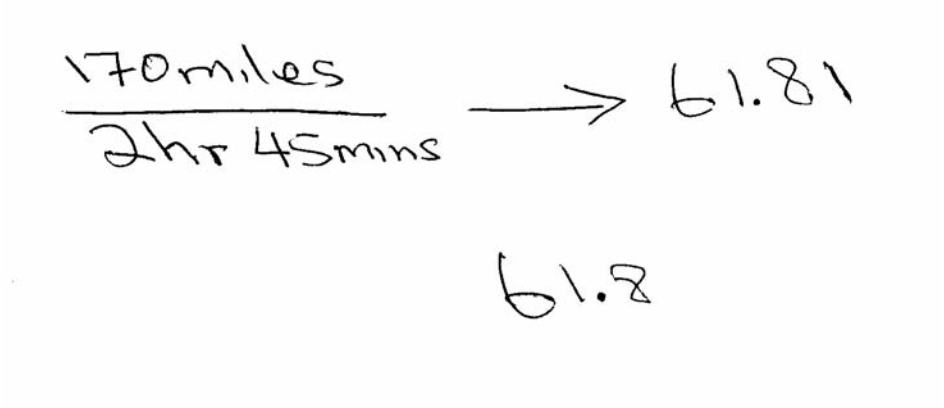
Thursday, June 18, 2015 — 9:15 a.m. to 12:15 p.m., only

SAMPLE RESPONSE SET

Table of Contents

Question 31

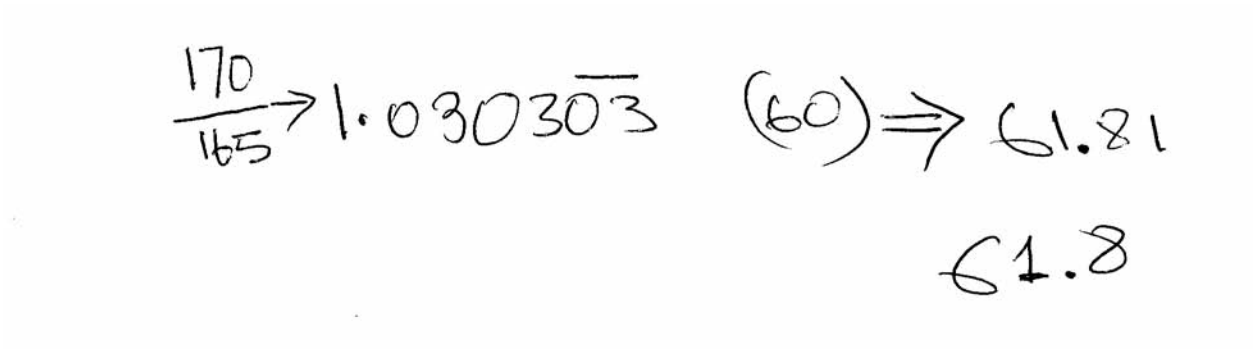
31 Jen traveled a distance of 170 miles in 2 hours and 45 minutes. Express her speed, in miles per hour, to the *nearest tenth*.



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

Question 31

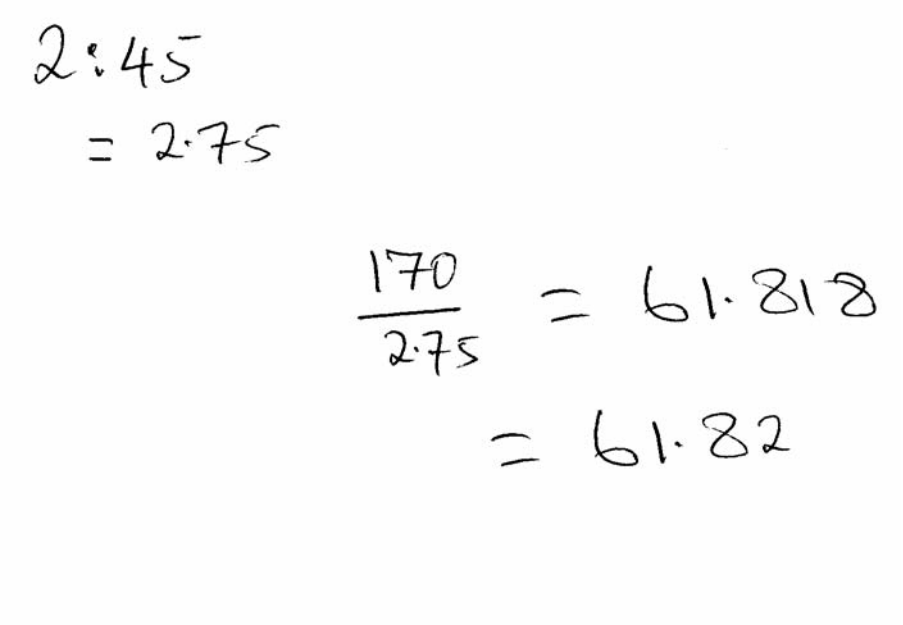
31 Jen traveled a distance of 170 miles in 2 hours and 45 minutes. Express her speed, in miles per hour, to the *nearest tenth*.



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

Question 31

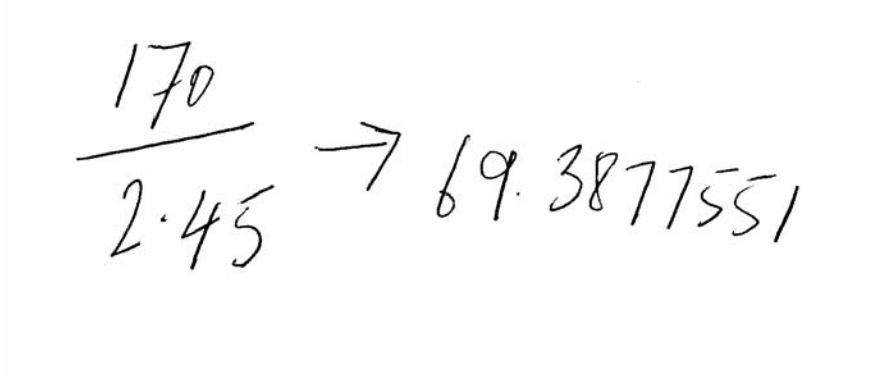
31 Jen traveled a distance of 170 miles in 2 hours and 45 minutes. Express her speed, in miles per hour, to the *nearest tenth*.



Score 1: The student made one error by rounding to the wrong decimal place.

Question 31

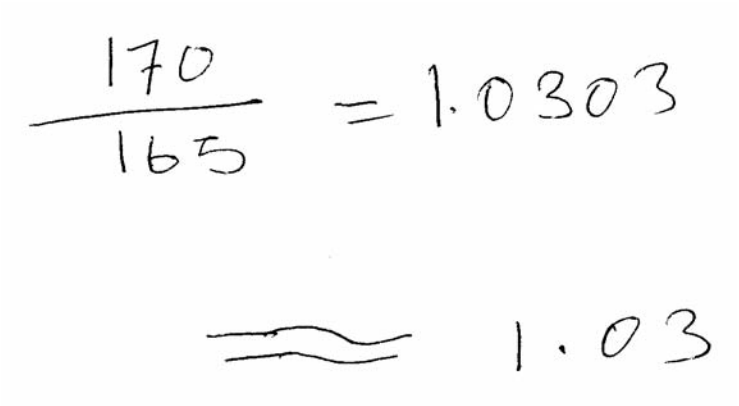
31 Jen traveled a distance of 170 miles in 2 hours and 45 minutes. Express her speed, in miles per hour, to the *nearest tenth*.



Score 0: The student made one conceptual error and one rounding error.

Question 31

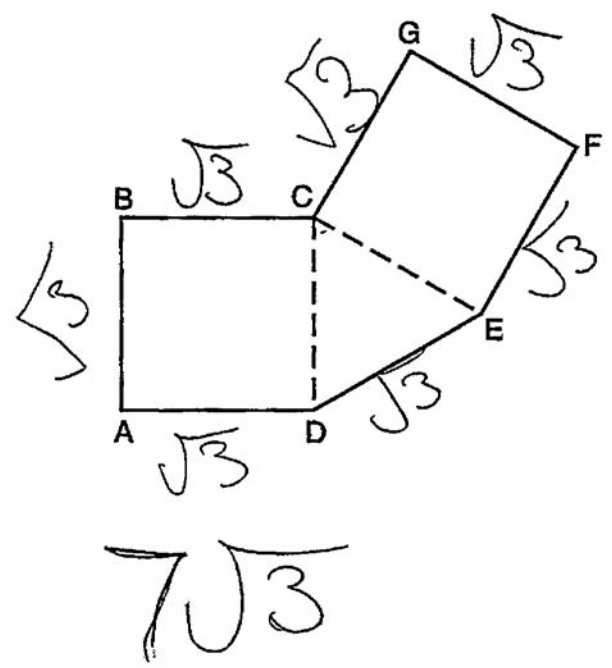
31 Jen traveled a distance of 170 miles in 2 hours and 45 minutes. Express her speed, in miles per hour, to the *nearest tenth*.



Score 0: The student made one conceptual error by finding miles per minutes and did not round correctly.

Question 32

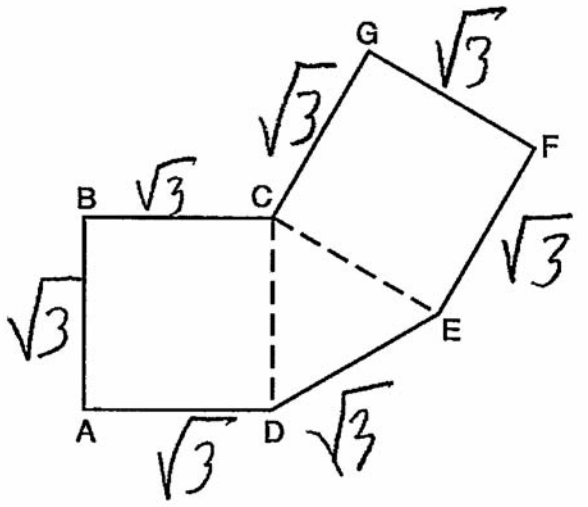
32 As shown below, polygon *ABCGFED* consists of two squares, *ABCD* and *CGFE*, and an equilateral triangle *CED*. The length of $\overline{BC}$ is $\sqrt{3}$ cm. Determine the perimeter of polygon *ABCGFED* in radical form.



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

Question 32

32 As shown below, polygon *ABCGFED* consists of two squares, *ABCD* and *CGFE*, and an equilateral triangle *CED*. The length of $\overline{BC}$ is $\sqrt{3}$ cm. Determine the perimeter of polygon *ABCGFED* in radical form.



$P = 7(s)$

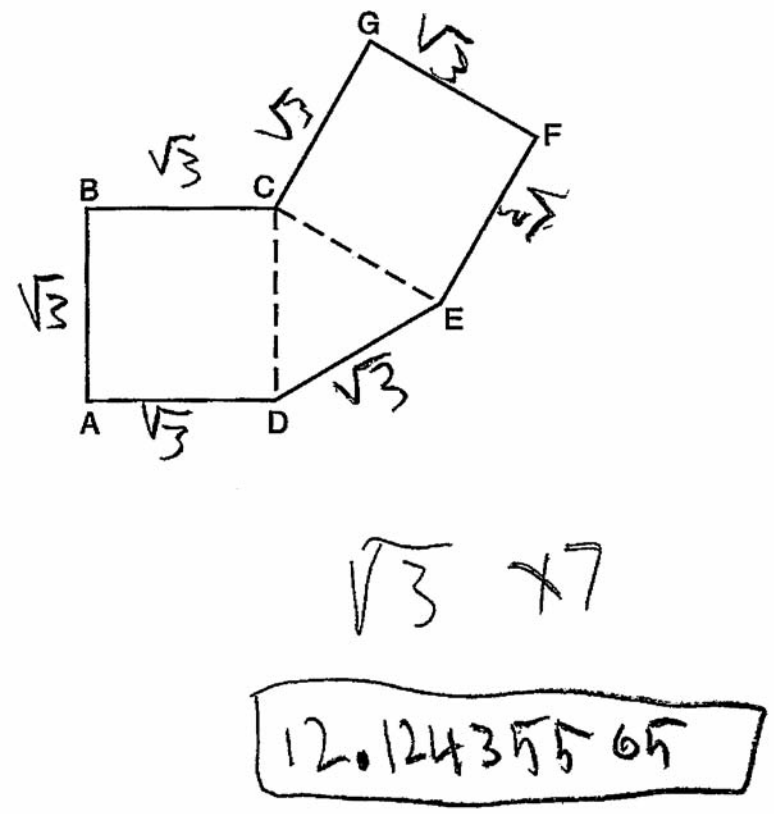
$P = 7(\sqrt{3})$

$P = \sqrt{147}$

Score 2: The student expressed the perimeter as the product of the number of sides and the length of a side. The student then wrote a radical equivalent to $7\sqrt{3}$.

Question 32

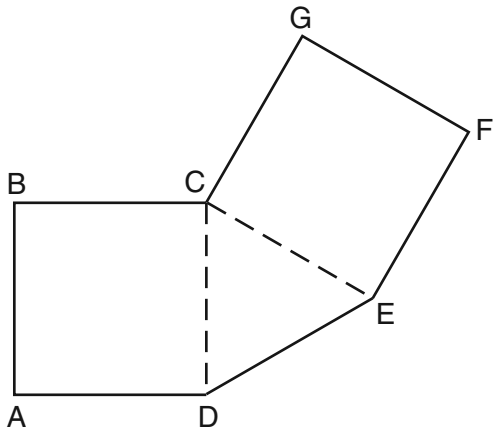
32 As shown below, polygon *ABCGFED* consists of two squares, *ABCD* and *CGFE*, and an equilateral triangle *CED*. The length of $\overline{BC}$ is $\sqrt{3}$ cm. Determine the perimeter of polygon *ABCGFED* in radical form.



Score 1: The student showed correct work to find $\sqrt{3} \times 7$, but identified the decimal as the answer.

Question 32

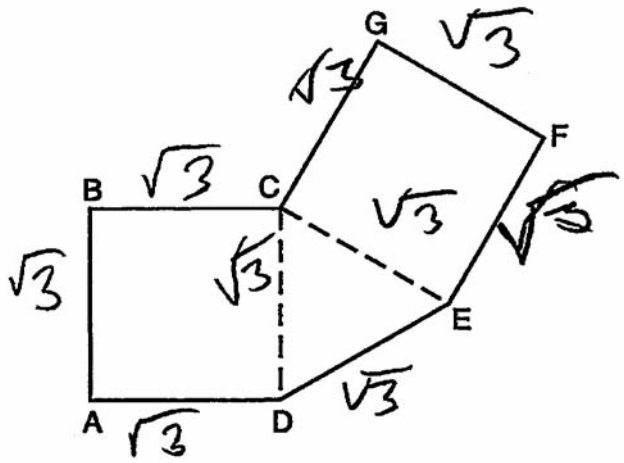
32 As shown below, polygon *ABCGFED* consists of two squares, *ABCD* and *CGFE*, and an equilateral triangle *CED*. The length of $\overline{BC}$ is $\sqrt{3}$ cm. Determine the perimeter of polygon *ABCGFED* in radical form.



Score 1: The student has the correct response, but no work is shown.

Question 32

32 As shown below, polygon *ABCGFED* consists of two squares, *ABCD* and *CGFE*, and an equilateral triangle *CED*. The length of $\overline{BC}$ is $\sqrt{3}$ cm. Determine the perimeter of polygon *ABCGFED* in radical form.



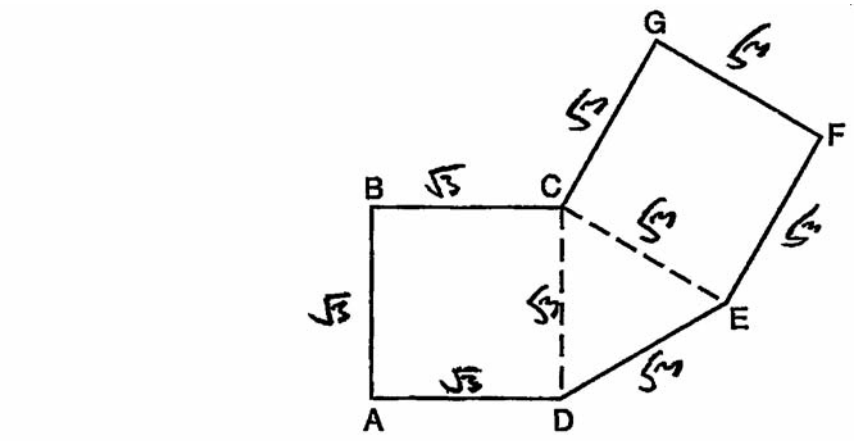
$\sqrt{3}+\sqrt{3}+\sqrt{3}+\sqrt{3}+\sqrt{3}+\sqrt{3}+\sqrt{3}=\sqrt{24}$

Perimeter of figure ABCGFED $\sqrt{24}$ cm.

Score 1: The student showed appropriate work to find the perimeter, but made a conceptual error when adding the radicals.

Question 32

32 As shown below, polygon *ABCGFED* consists of two squares, *ABCD* and *CGFE*, and an equilateral triangle *CED*. The length of $\overline{BC}$ is $\sqrt{3}$ cm. Determine the perimeter of polygon *ABCGFED* in radical form.

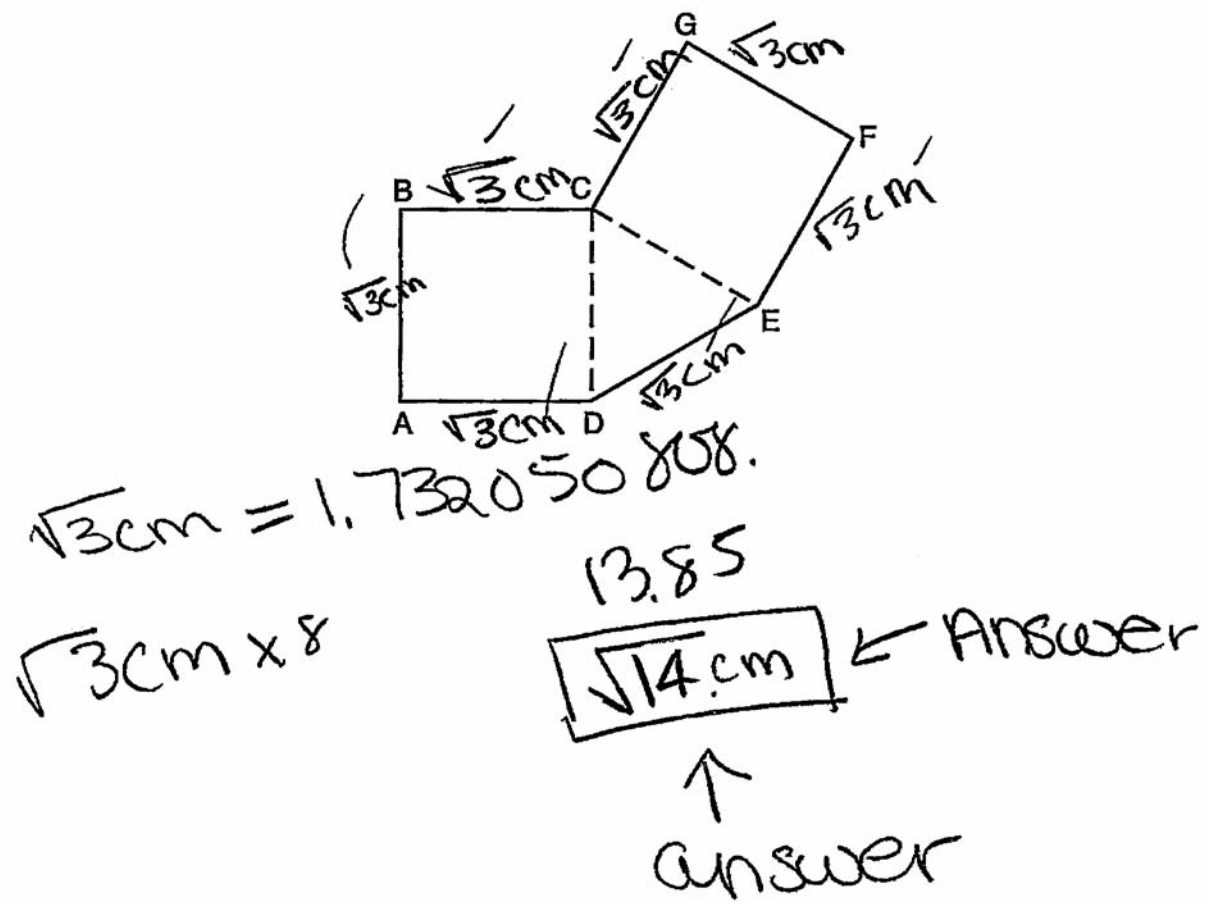


Perimeter = $9\sqrt{3}$

Score 1: The student made a conceptual error by including all the sides of the equilateral triangle when calculating the perimeter of polygon ABCGFED.

Question 32

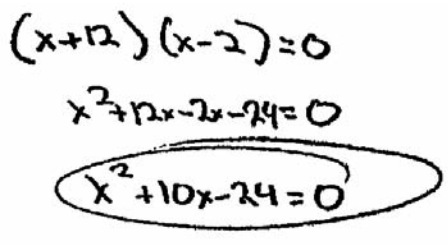
32 As shown below, polygon *ABCGFED* consists of two squares, *ABCD* and *CGFE*, and an equilateral triangle *CED*. The length of $\overline{BC}$ is $\sqrt{3}$ cm. Determine the perimeter of polygon *ABCGFED* in radical form.



Score 0: The student made more than one error when finding the perimeter.

Question 33

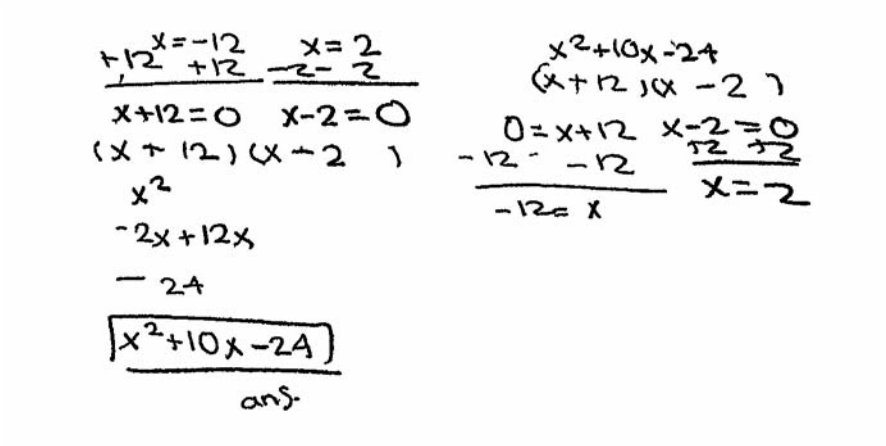
33 Write a quadratic equation in standard form that has roots of −12 and 2.



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

Question 33

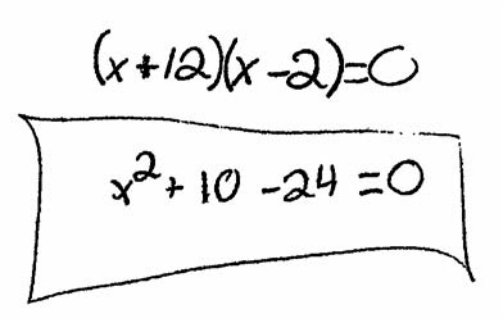
33 Write a quadratic equation in standard form that has roots of −12 and 2.



Score 1: The student showed appropriate work, but wrote an expression instead of an equation.

Question 33

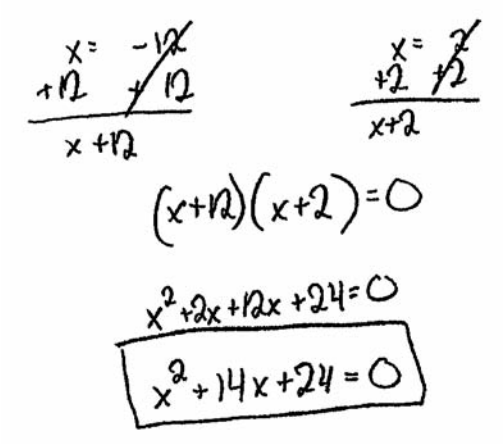
33 Write a quadratic equation in standard form that has roots of −12 and 2.



Score 1: The student wrote a correct equation in factored form but forgot "*x*" on the middle term when multiplying the factors.

Question 33

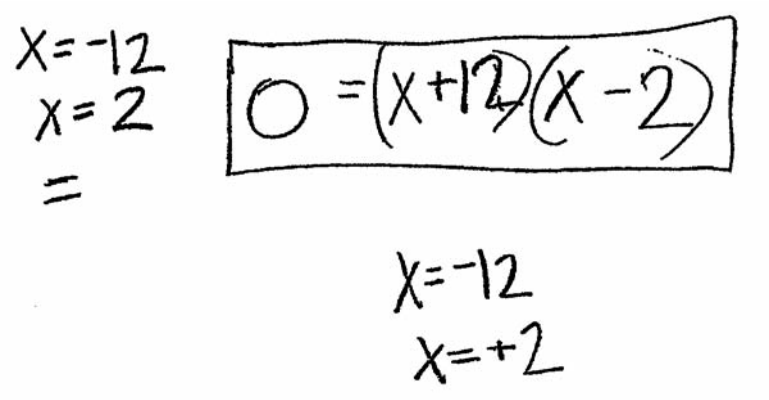
33 Write a quadratic equation in standard form that has roots of −12 and 2.



Score 1: The student made an error in writing the second factor of the equation, but wrote an appropriate quadratic equation.

Question 33

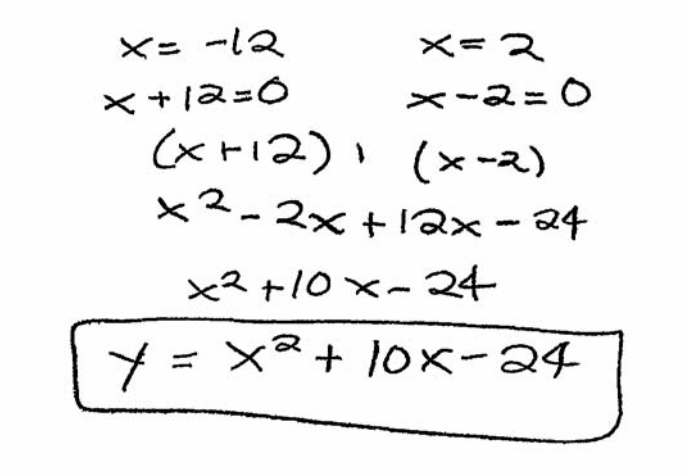
33 Write a quadratic equation in standard form that has roots of −12 and 2.



Score 1: The student wrote a correct equation in factored form, but showed no further correct work.

Question 33

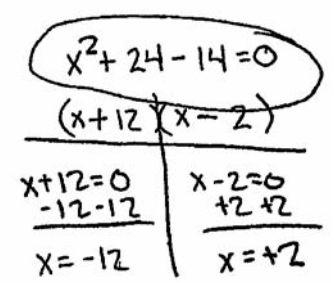
33 Write a quadratic equation in standard form that has roots of −12 and 2.



Score 1: The student showed appropriate work, but set the correct expression equal to y.

Question 33

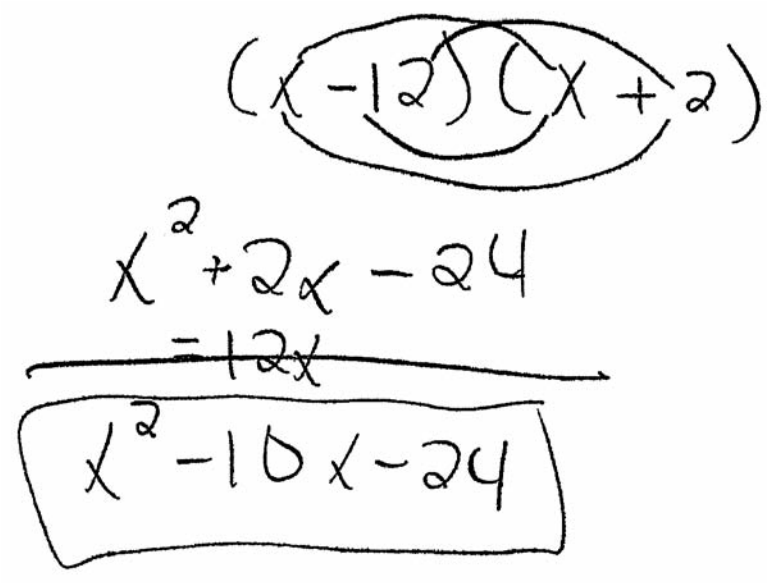
33 Write a quadratic equation in standard form that has roots of −12 and 2.



Score 0: The student wrote the expression $(x + 12)(x - 2)$, but showed no further correct work.

Question 33

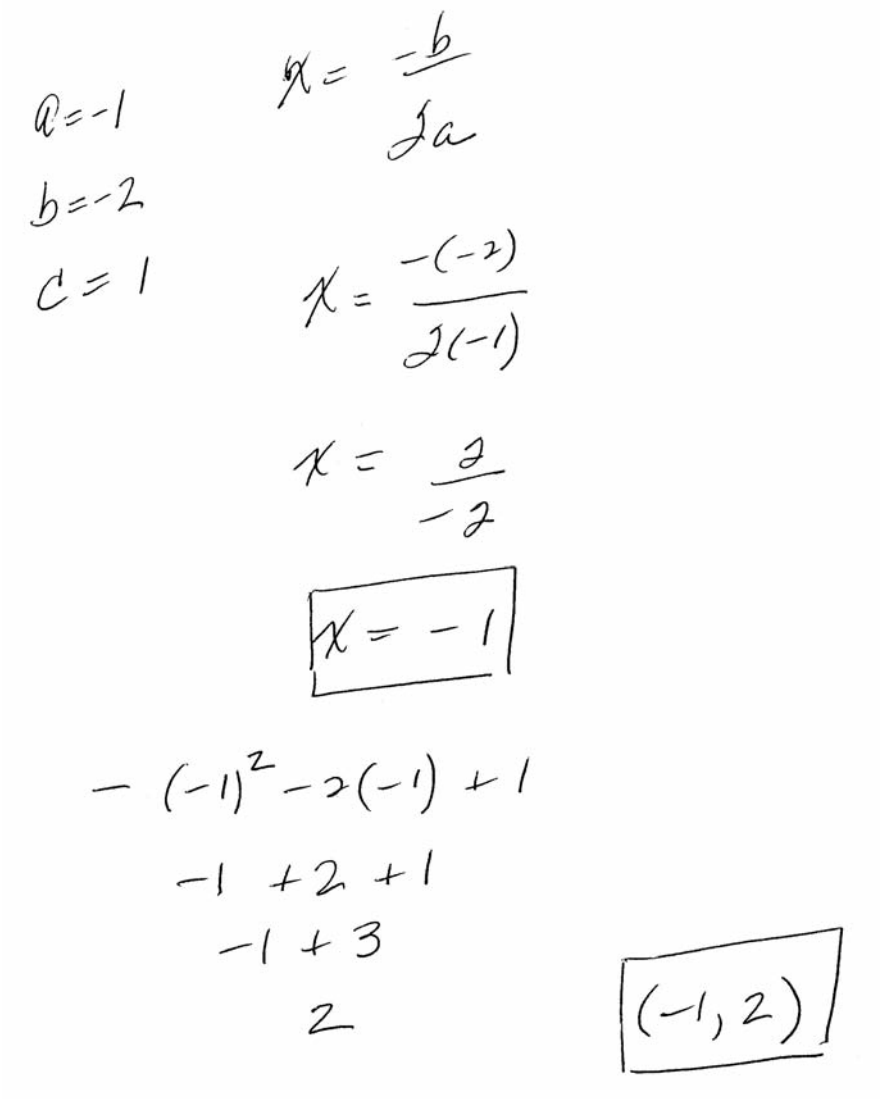
33 Write a quadratic equation in standard form that has roots of −12 and 2.



Score 0: The student wrote incorrect factors and did not write an equation.

Question 34

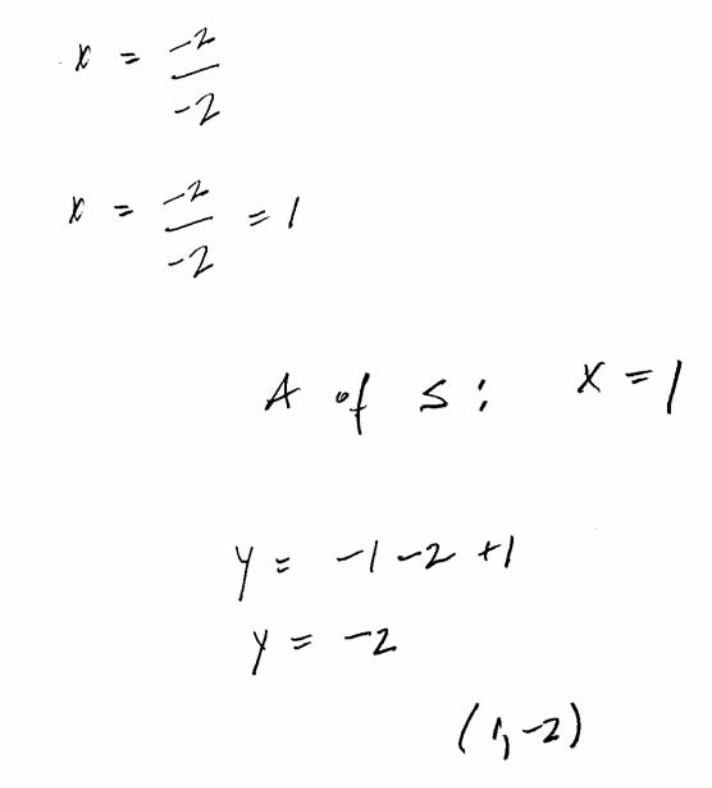
34 Find algebraically the equation of the axis of symmetry and the vertex of the parabola represented by the equation $y = -x^2 - 2x + 1$.



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

Question 34

34 Find algebraically the equation of the axis of symmetry and the vertex of the parabola represented by the equation $y = -x^2 - 2x + 1$.



Score 2: The student made an error in finding the axis of symmetry, but found an appropriate vertex.

Question 34

34 Find algebraically the equation of the axis of symmetry and the vertex of the parabola represented by the equation $y = -x^2 - 2x + 1$.

$$\frac{-b}{2a} = \frac{-(-2)}{2(-1)} = \frac{2}{-2} = -1$$

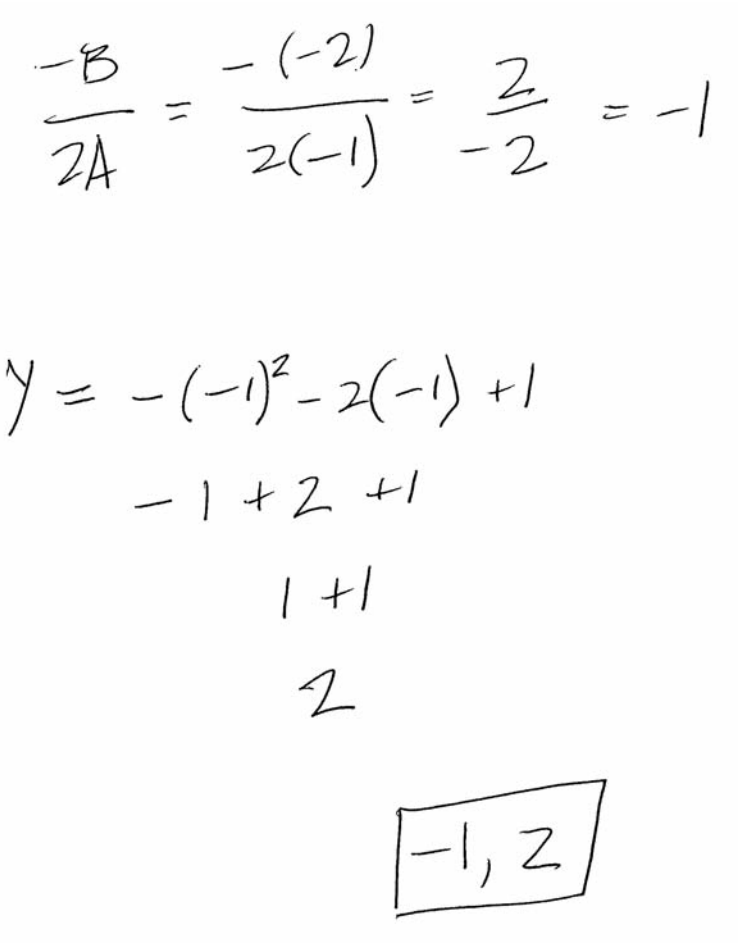
$$y = -(-1)^2 - 2(-1) + 1 = 2$$

$$(-1, 2)$$

Score 2: The student showed appropriate work to find the vertex, but did not state the axis of symmetry correctly.

Question 34

34 Find algebraically the equation of the axis of symmetry and the vertex of the parabola represented by the equation $y = -x^2 - 2x + 1$.



Score 1: The student forgot to write "x" in the equation for the axis of symmetry and did not write parentheses around the coordinates of the vertex.

Question 34

34 Find algebraically the equation of the axis of symmetry and the vertex of the parabola represented by the equation $y = -x^2 - 2x + 1$.

$X = -1$

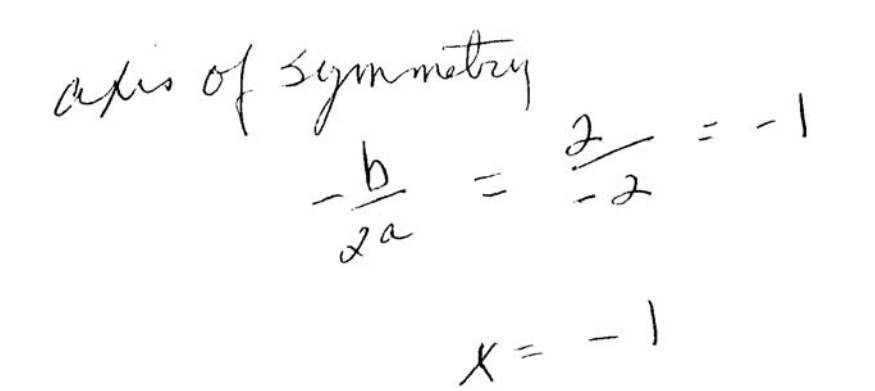
$(-1, 2)$

used a TI

Score 1: The student wrote a correct response, but showed no work.

Question 34

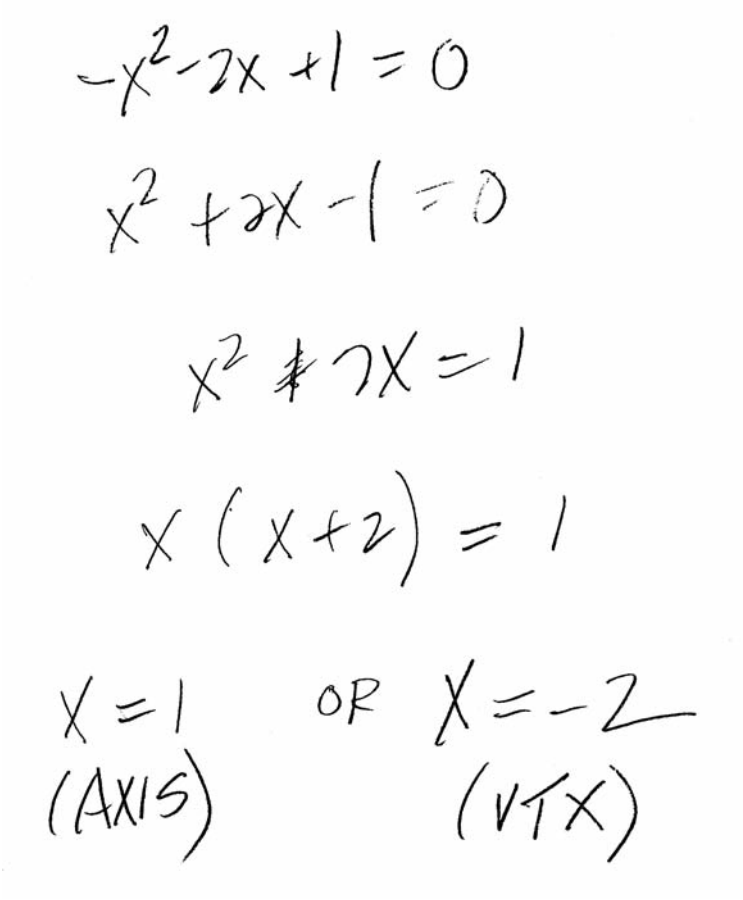
34 Find algebraically the equation of the axis of symmetry and the vertex of the parabola represented by the equation $y = -x^2 - 2x + 1$.



Score 1: The student showed appropriate work to find the axis of symmetry, but showed no further work.

Question 34

34 Find algebraically the equation of the axis of symmetry and the vertex of the parabola represented by the equation $y = -x^2 - 2x + 1$.



Score 0: The work done by the student was completely incorrect.

Question 35

35 Linda measures her rectangular bedroom window for a new shade. The measurements she made are 36 inches by 42 inches. The actual measurements of the window are 36.5 inches and 42.5 inches. Determine the relative error in calculating the area. Express your answer as a decimal to the *nearest thousandth*.

$\frac{1551.25 - 1512}{1551.25}$ $\frac{39.25}{1551.25}$

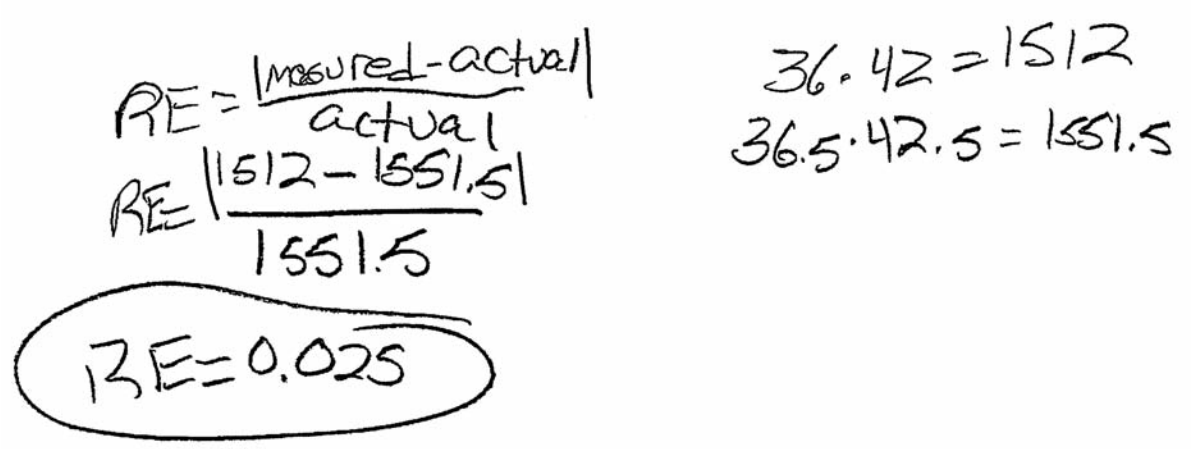
.025302 1757

.025
relative error

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

Question 35

35 Linda measures her rectangular bedroom window for a new shade. The measurements she made are 36 inches by 42 inches. The actual measurements of the window are 36.5 inches and 42.5 inches. Determine the relative error in calculating the area. Express your answer as a decimal to the *nearest thousandth*.



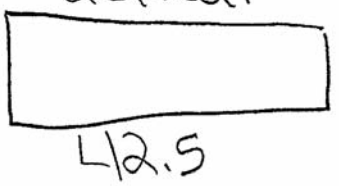
Score 3: The student has a complete and correct response.

Question 35

35 Linda measures her rectangular bedroom window for a new shade. The measurements she made are 36 inches by 42 inches. The actual measurements of the window are 36.5 inches and 42.5 inches. Determine the relative error in calculating the area. Express your answer as a decimal to the *nearest thousandth*.

$$\frac{|\text{actual} - \text{observed}|}{\text{actual}}$$

actual



$L \cdot W = A$

$12.5 \times 36.5 = 1551.25$

observed

$L \cdot W = A$

$42 \times 36 = 1512$

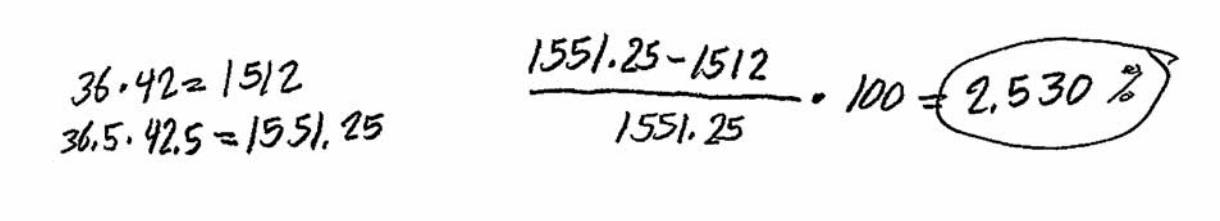
$RE = \frac{1551.25 - 1512}{1551.25}$

$RE = .03$ inches

Score 2: The student rounded to the nearest hundredth instead of thousandth.

Question 35

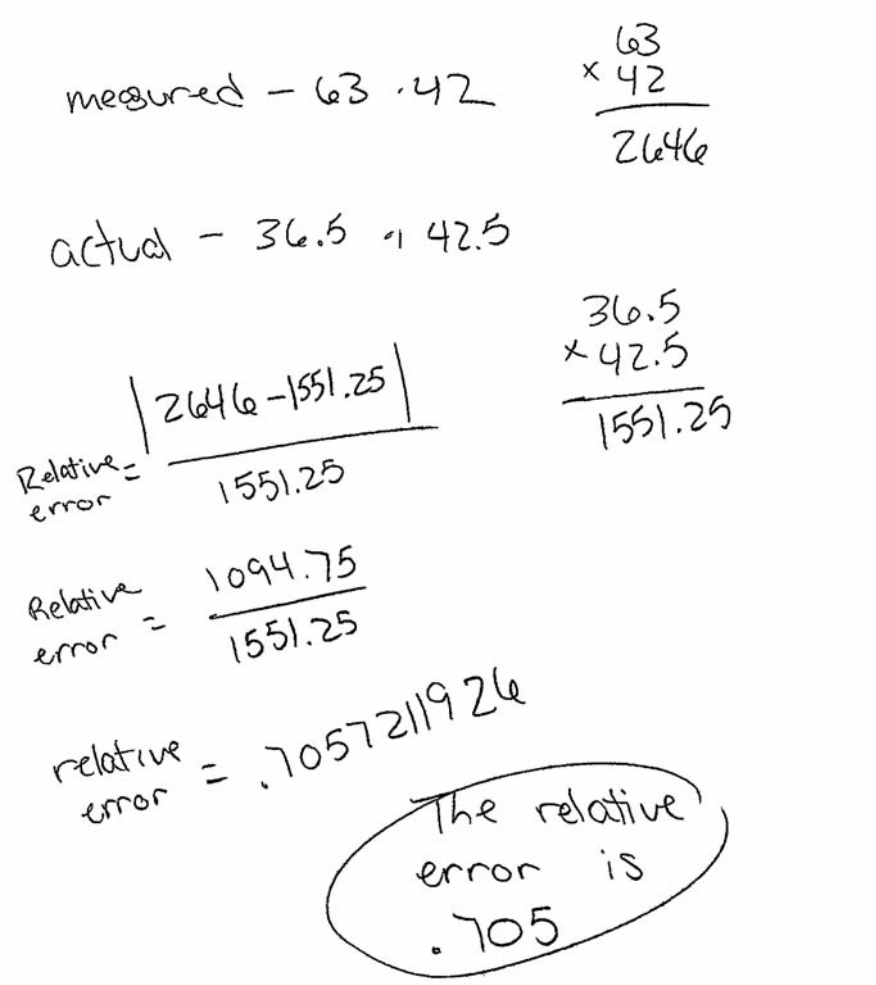
35 Linda measures her rectangular bedroom window for a new shade. The measurements she made are 36 inches by 42 inches. The actual measurements of the window are 36.5 inches and 42.5 inches. Determine the relative error in calculating the area. Express your answer as a decimal to the *nearest thousandth*.



Score 2: The student made an error by expressing the relative error as a percentage.

Question 35

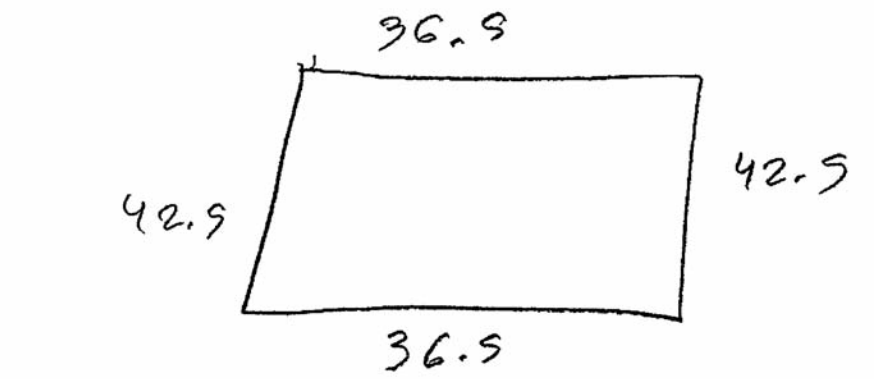
35 Linda measures her rectangular bedroom window for a new shade. The measurements she made are 36 inches by 42 inches. The actual measurements of the window are 36.5 inches and 42.5 inches. Determine the relative error in calculating the area. Express your answer as a decimal to the *nearest thousandth*.



Score 1: The student made a transcription error when finding the measured area and made a rounding error when finding the relative error.

Question 35

35 Linda measures her rectangular bedroom window for a new shade. The measurements she made are 36 inches by 42 inches. The actual measurements of the window are 36.5 inches and 42.5 inches. Determine the relative error in calculating the area. Express your answer as a decimal to the *nearest thousandth*.



42
× 36
1512

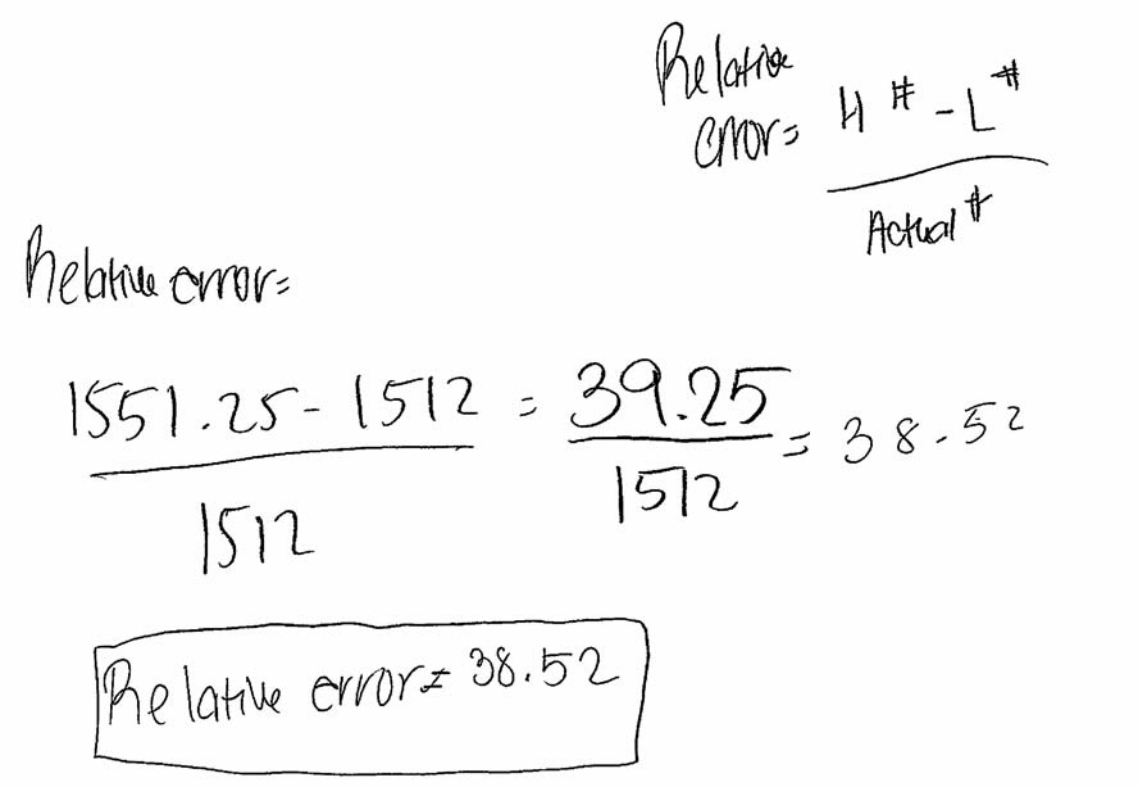
42.5 × 36.5 = 1551.25

1551.25
− 1512.00
39.25 in error

Score 1: The student made a conceptual error by finding the amount of error instead of the relative error.

Question 35

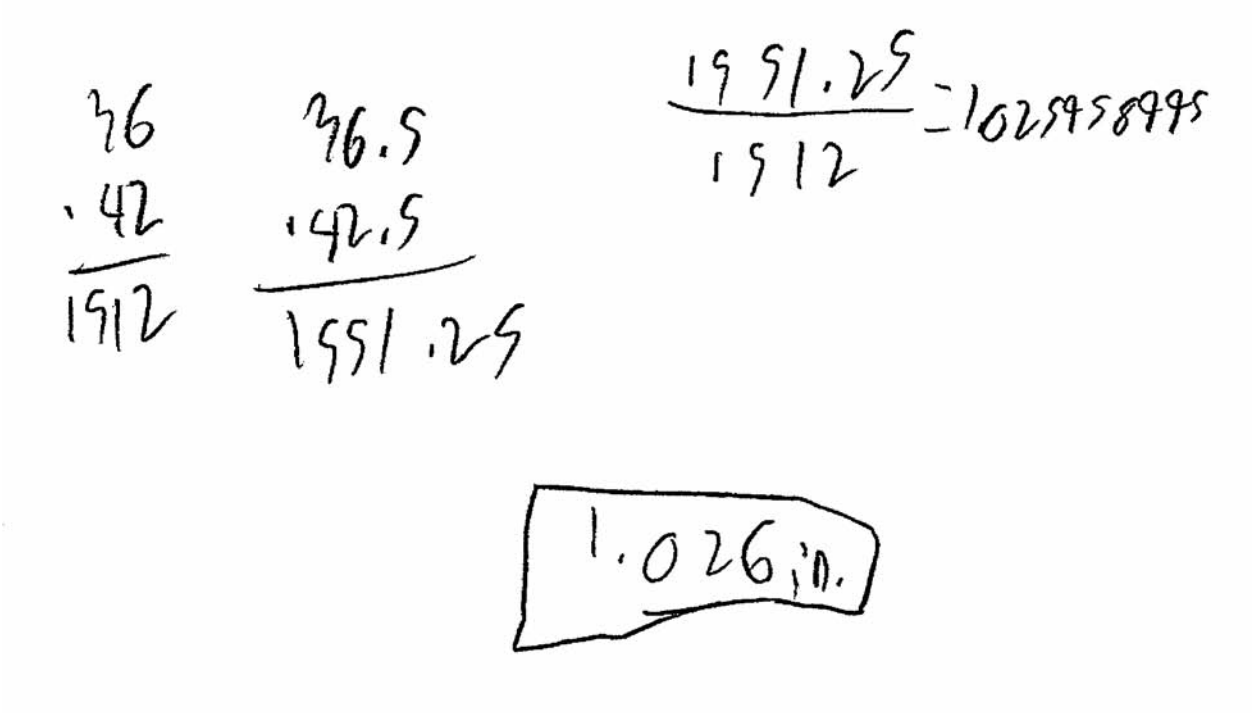
35 Linda measures her rectangular bedroom window for a new shade. The measurements she made are 36 inches by 42 inches. The actual measurements of the window are 36.5 inches and 42.5 inches. Determine the relative error in calculating the area. Express your answer as a decimal to the *nearest thousandth*.



Score 0: The student used an incorrect formula, divided incorrectly, and did not round to the correct decimal place.

Question 35

35 Linda measures her rectangular bedroom window for a new shade. The measurements she made are 36 inches by 42 inches. The actual measurements of the window are 36.5 inches and 42.5 inches. Determine the relative error in calculating the area. Express your answer as a decimal to the *nearest thousandth*.



Score 0: The student found both areas correctly, but showed no further correct work.

Question 36

36 The following set of data represents the heights, in inches, of the 20 students in Ms. Fitzgerald's freshman class:

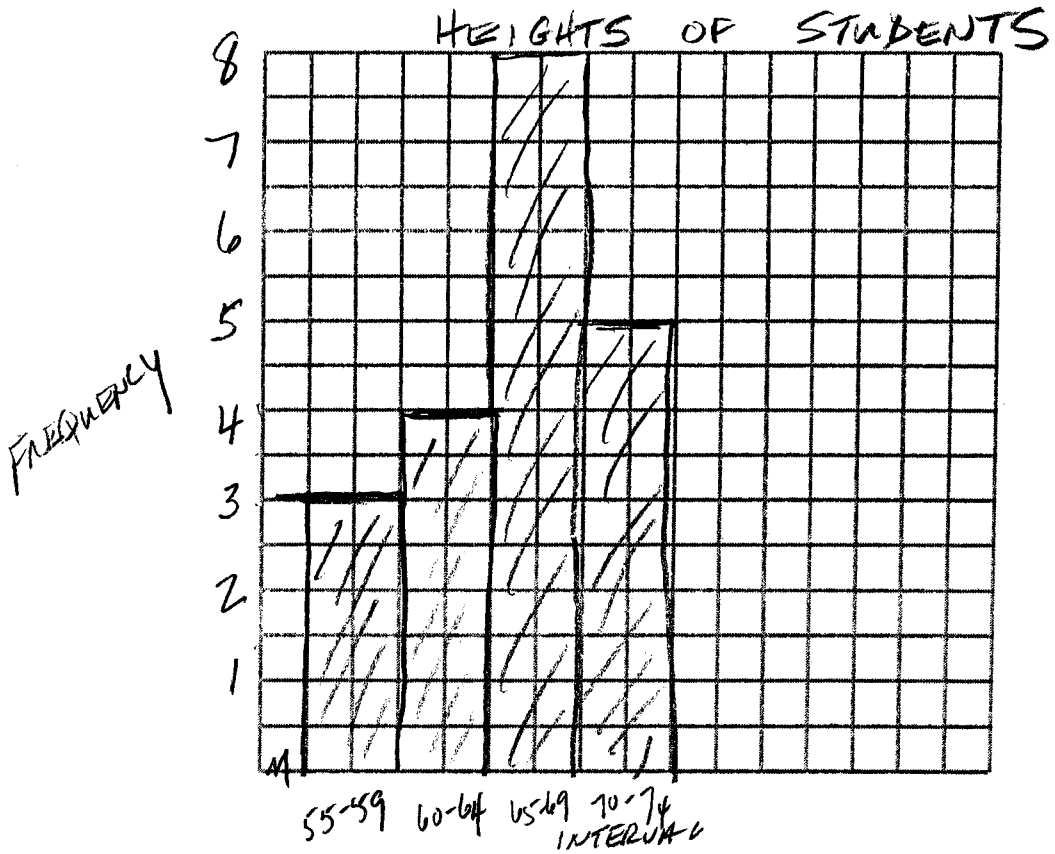
63, 56, 67, 59, 70, 69, 62, 74, 66, 72
67, 60, 70, 66, 67, 58, 68, 72, 63, 67

Complete the frequency table below.

Heights of Students

Interval	Tally	Frequency
55–59	III	3
60–64	IIII	4
65–69	HHT III	8
70–74	HHT	5

On the grid below, draw and label a frequency histogram for these data.



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

Question 36

36 The following set of data represents the heights, in inches, of the 20 students in Ms. Fitzgerald's freshman class:

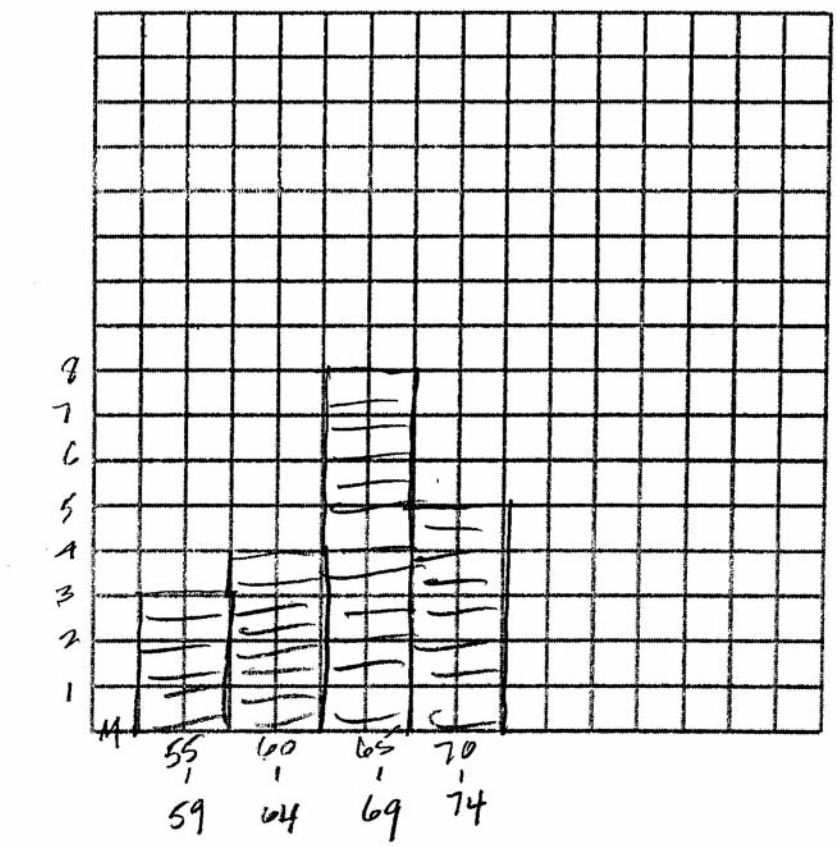
63, 56, 67, 59, 70, 69, 62, 74, 66, 72
67, 60, 70, 66, 67, 58, 68, 72, 63, 67

Complete the frequency table below.

Heights of Students

Interval	Tally	Frequency
55–59	|||	3
60–64	||||	4
65–69	|||| |||	8
70–74	||||	5

On the grid below, draw and label a frequency histogram for these data.



Score 2: The student completed the frequency table correctly and made an appropriate histogram, but did not label it.

Question 36

36 The following set of data represents the heights, in inches, of the 20 students in Ms. Fitzgerald's freshman class:

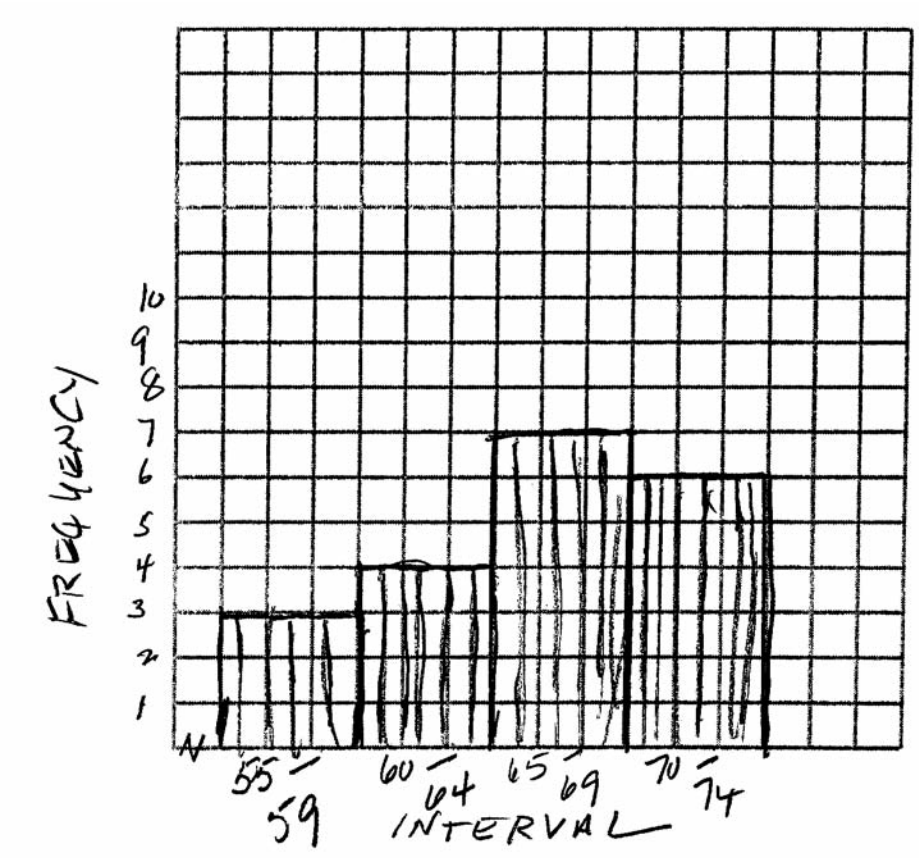
63, 56, 67, 59, 70, 69, 62, 74, 66, 72
67, 60, 70, 66, 67, 58, 68, 72, 63, 67

Complete the frequency table below.

Heights of Students

Interval	Tally	Frequency
55–59	𝍸 |	3
60–64	𝍸 ||	4
65–69	𝍸 𝍸 ||	7
70–74	𝍸 |	6

On the grid below, draw and label a frequency histogram for these data.



Score 2: The student made an error in completing the frequency table. The student drew and labeled an appropriate histogram.

Question 36

36 The following set of data represents the heights, in inches, of the 20 students in Ms. Fitzgerald's freshman class:

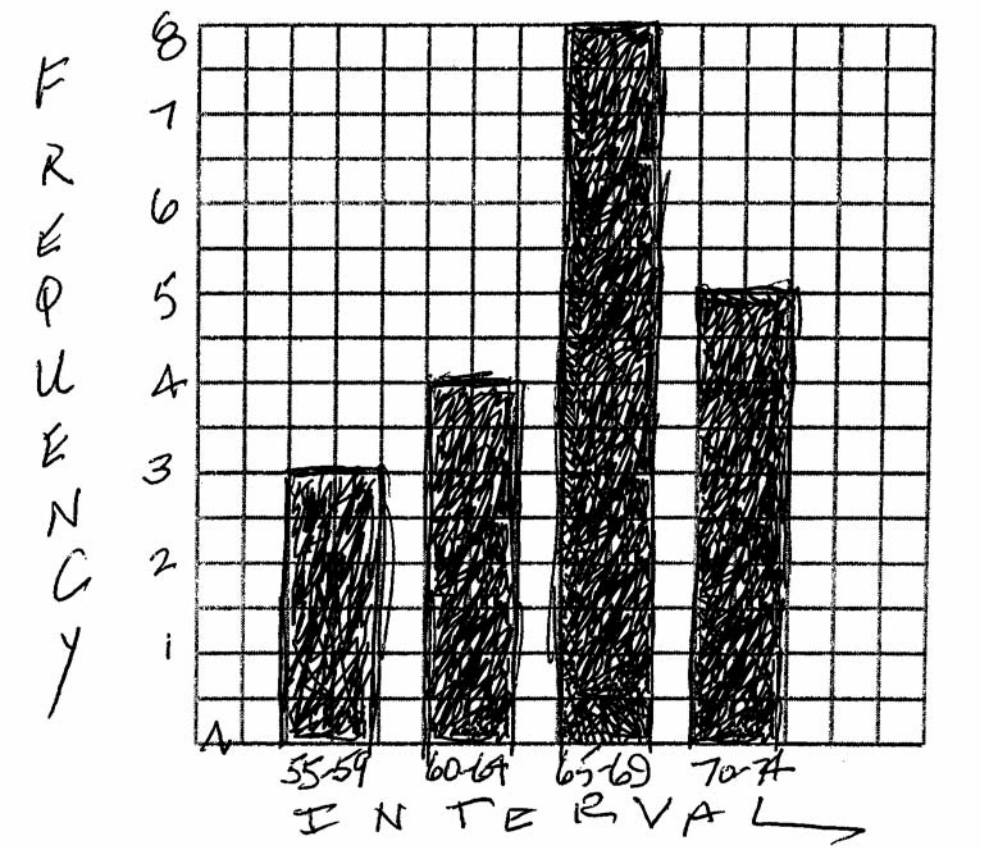
63, 56, 67, 59, 70, 69, 62, 74, 66, 72
67, 60, 70, 66, 67, 58, 68, 72, 63, 67

Complete the frequency table below.

Heights of Students

Interval	Tally	Frequency
55–59	1 1 1	3
60–64	1 1 1 1	4
65–69	1 1 1 1 1 1 1 1	8
70–74	1 1 1 1 1	5

On the grid below, draw and label a frequency histogram for these data.



Score 1: The student completed the frequency table correctly, but made a conceptual error by drawing a bar graph.

Question 36

36 The following set of data represents the heights, in inches, of the 20 students in Ms. Fitzgerald's freshman class:

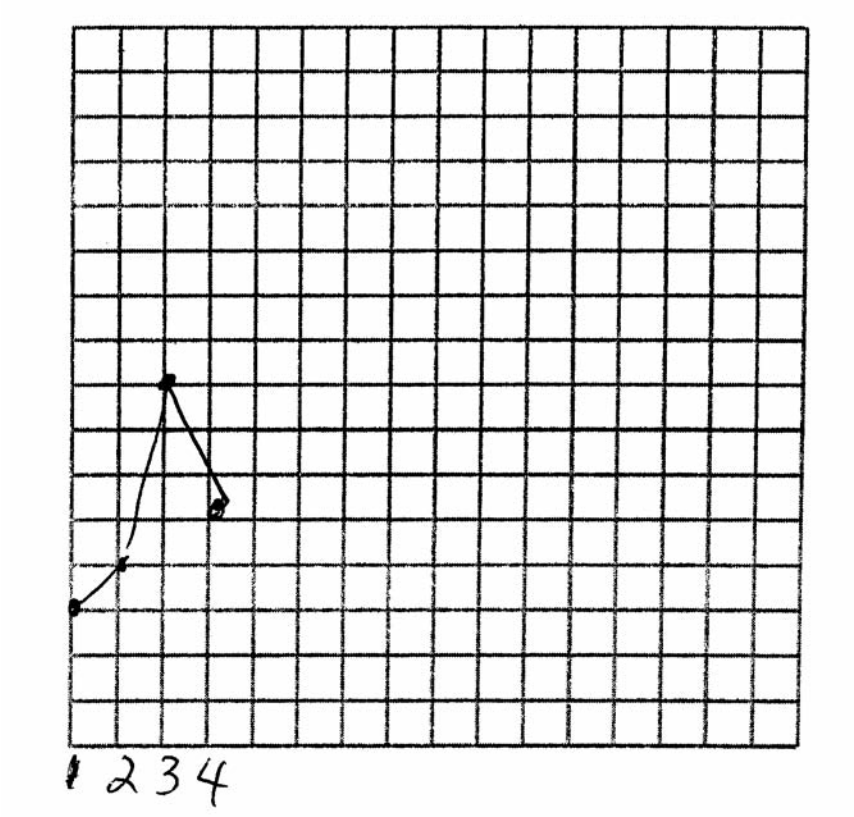
63, 56, 67, 59, 70, 69, 62, 74, 66, 72
67, 60, 70, 66, 67, 58, 68, 72, 63, 67

Complete the frequency table below.

Heights of Students

Interval	Tally	Frequency
55–59	///	3
60–64	////	4
65–69	//// ///	8
70–74	////	5

On the grid below, draw and label a frequency histogram for these data.



Score 1: The student completed the frequency table correctly, but showed no further correct work.

Question 36

36 The following set of data represents the heights, in inches, of the 20 students in Ms. Fitzgerald's freshman class:

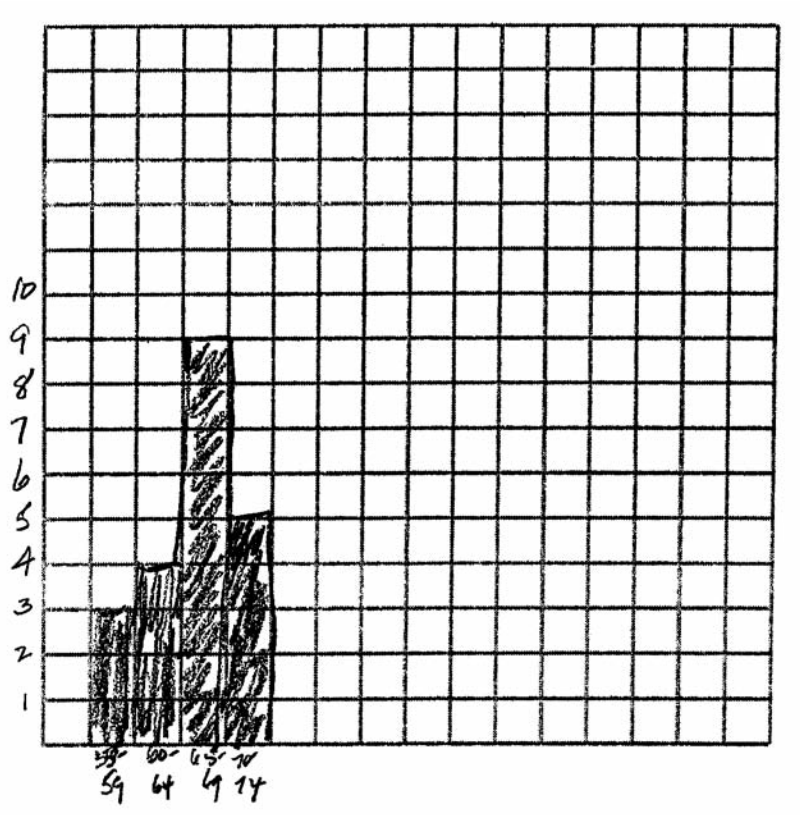
63, 56, 67, 59, 70, 69, 62, 74, 66, 72
67, 60, 70, 66, 67, 58, 68, 72, 63, 67

Complete the frequency table below.

Heights of Students

Interval	Tally	Frequency
55–59	|||	3
60–64	||||	4
65–69	||||||||	8
70–74	|||||	5

On the grid below, draw and label a frequency histogram for these data.



Score 1: The student completed the frequency table correctly. The student made both graphing and labeling errors when drawing the histogram.

Question 36

36 The following set of data represents the heights, in inches, of the 20 students in Ms. Fitzgerald's freshman class:

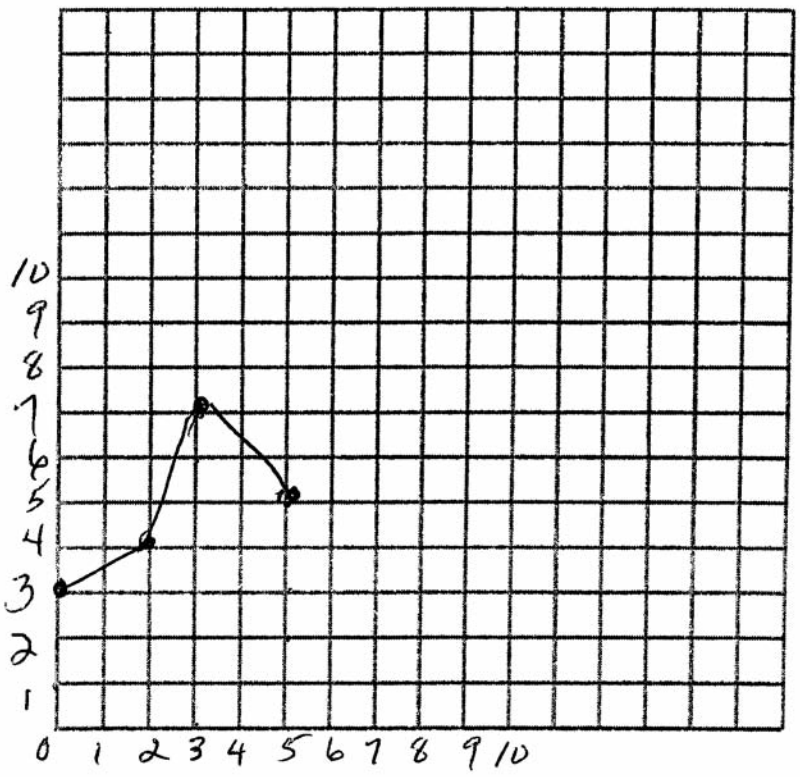
63, 56, 67, 59, 70, 69, 62, 74, 66, 72
67, 60, 70, 66, 67, 58, 68, 72, 63, 67

Complete the frequency table below.

Heights of Students

Interval	Tally	Frequency
55–59	111	3
60–64	1111	4
65–69	𝍸 111	7
70–74	𝍸	5

On the grid below, draw and label a frequency histogram for these data.



Score 0: The student made an error in completing the frequency table. The student drew a completely incorrect graph.

Question 37

37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

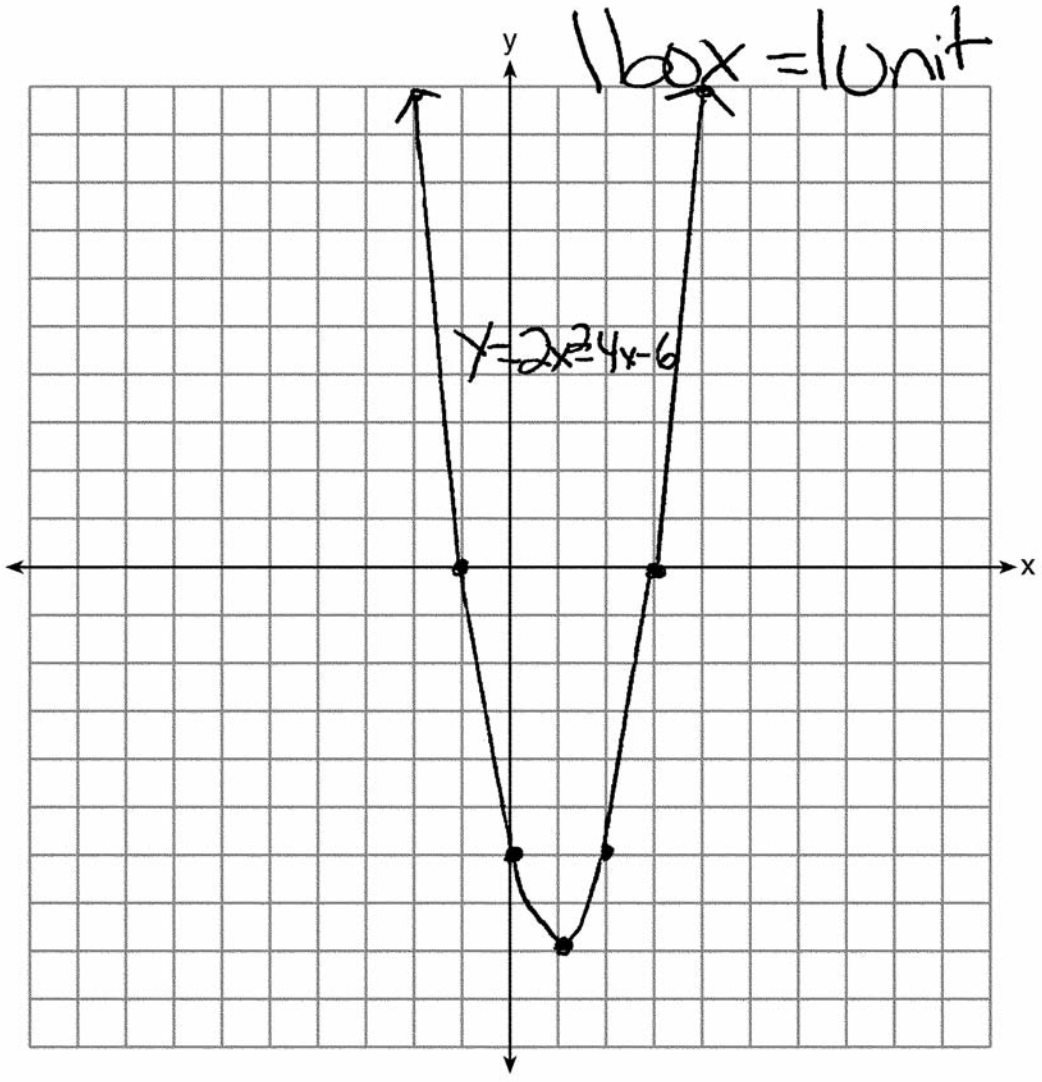
State the roots of $0 = 2x^2 - 4x - 6$.

$2(x^2-2x-3) \rightarrow 2(x+1)(x-3)$

$2(x+1)=0$ $2x+2=0$ $-2 \quad -2$ $2x=-2$ $x=-1$

$2(x-3)=0$ $2x-6=0$ $+6 \quad +6$ $2x=6$ $x=3$

roots $=-1, 3$

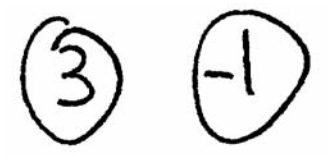


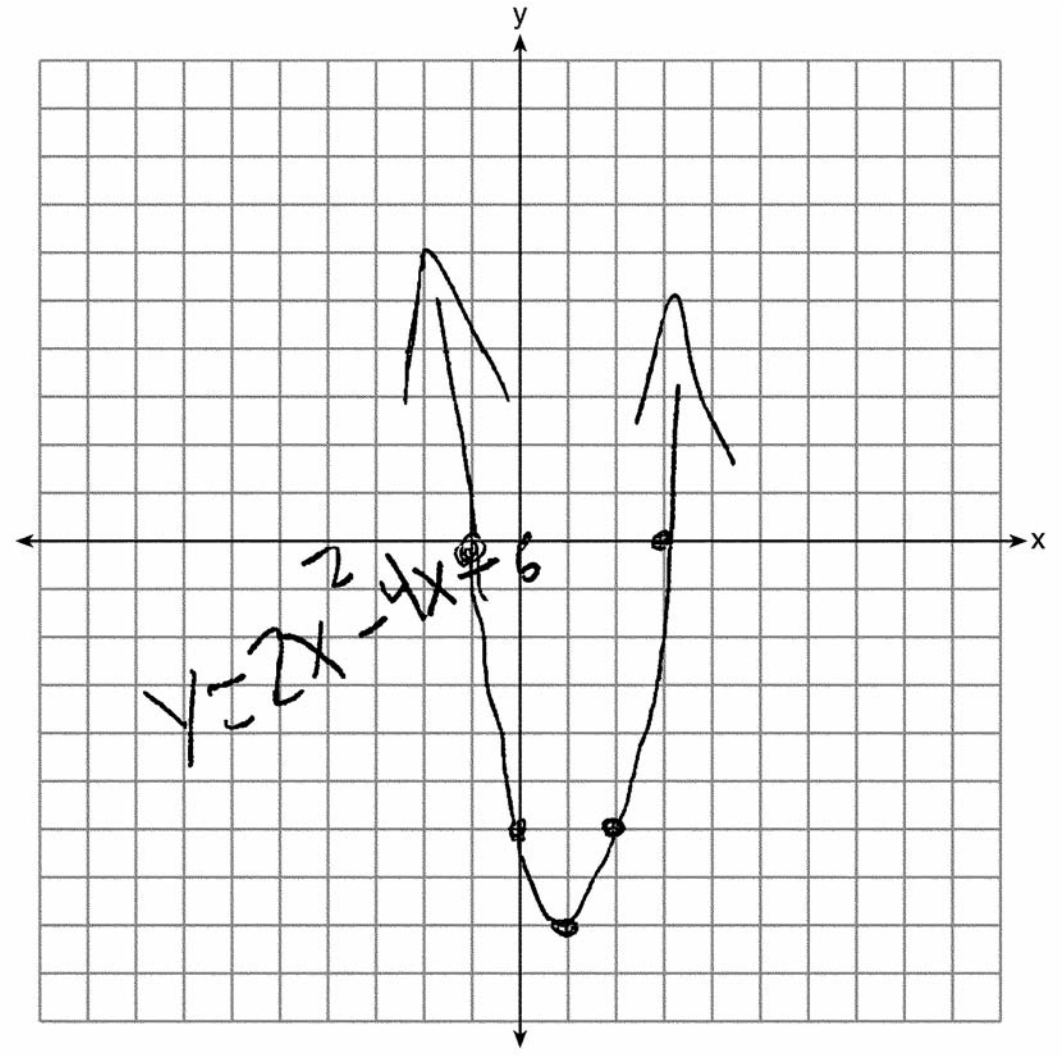
Score 4: The student has complete and correct work.

Question 37

37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

State the roots of $0 = 2x^2 - 4x - 6$.



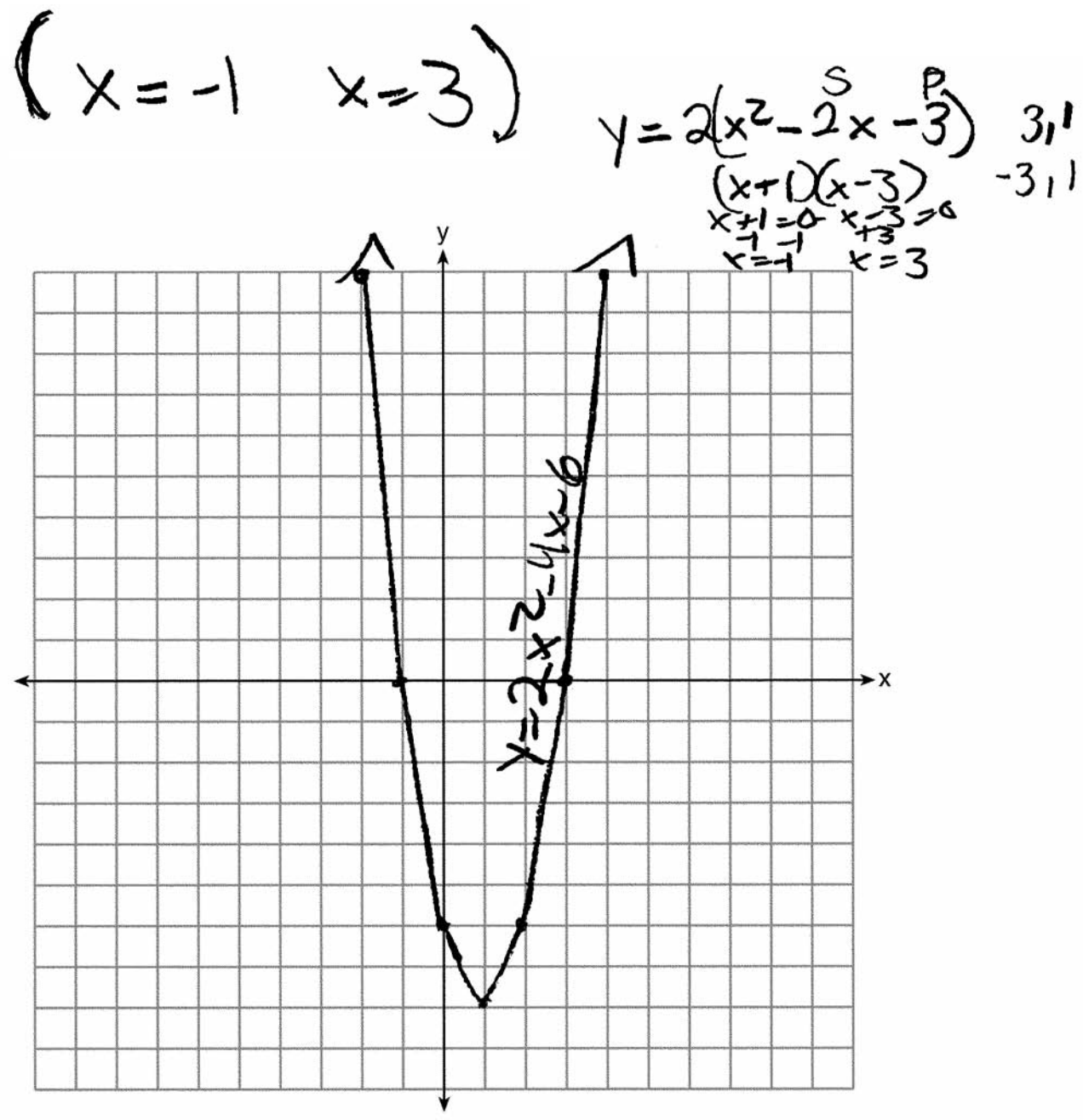


Score 4: The student showed complete and correct work.

Question 37

37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

State the roots of $0 = 2x^2 - 4x - 6$.



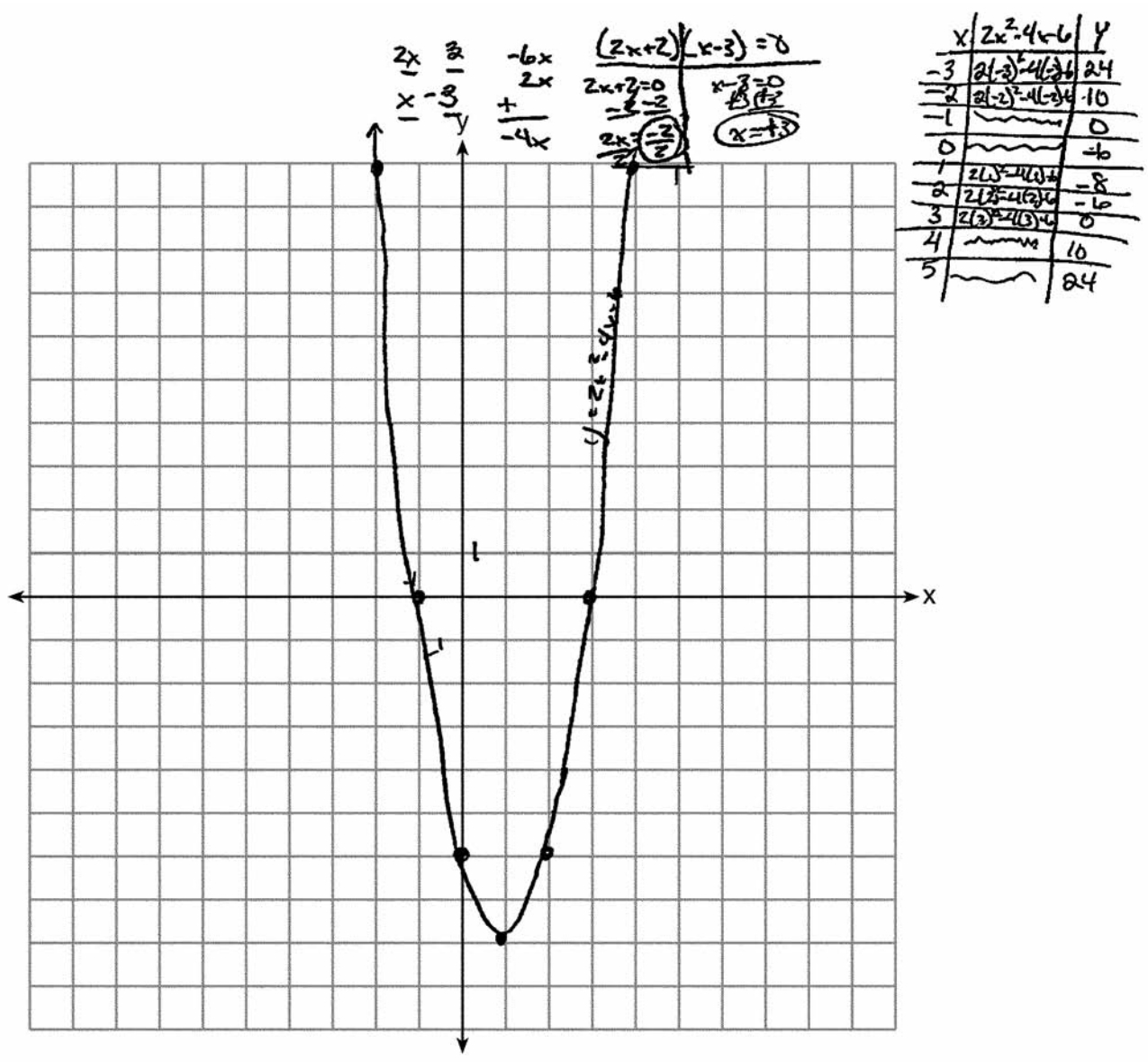
Score 4: The student showed complete and correct work.

Question 37

37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

State the roots of $0 = 2x^2 - 4x - 6$.

Roots → (−1,0) (3,0)

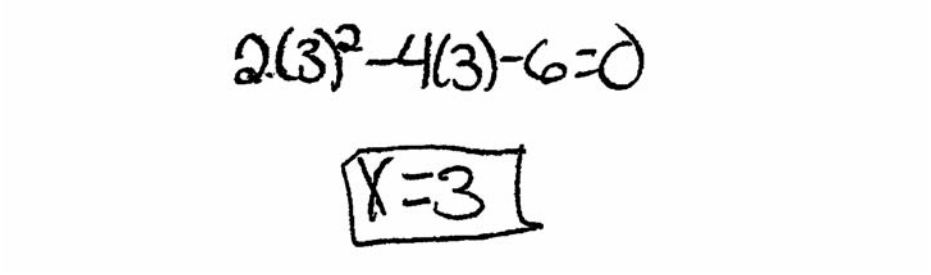


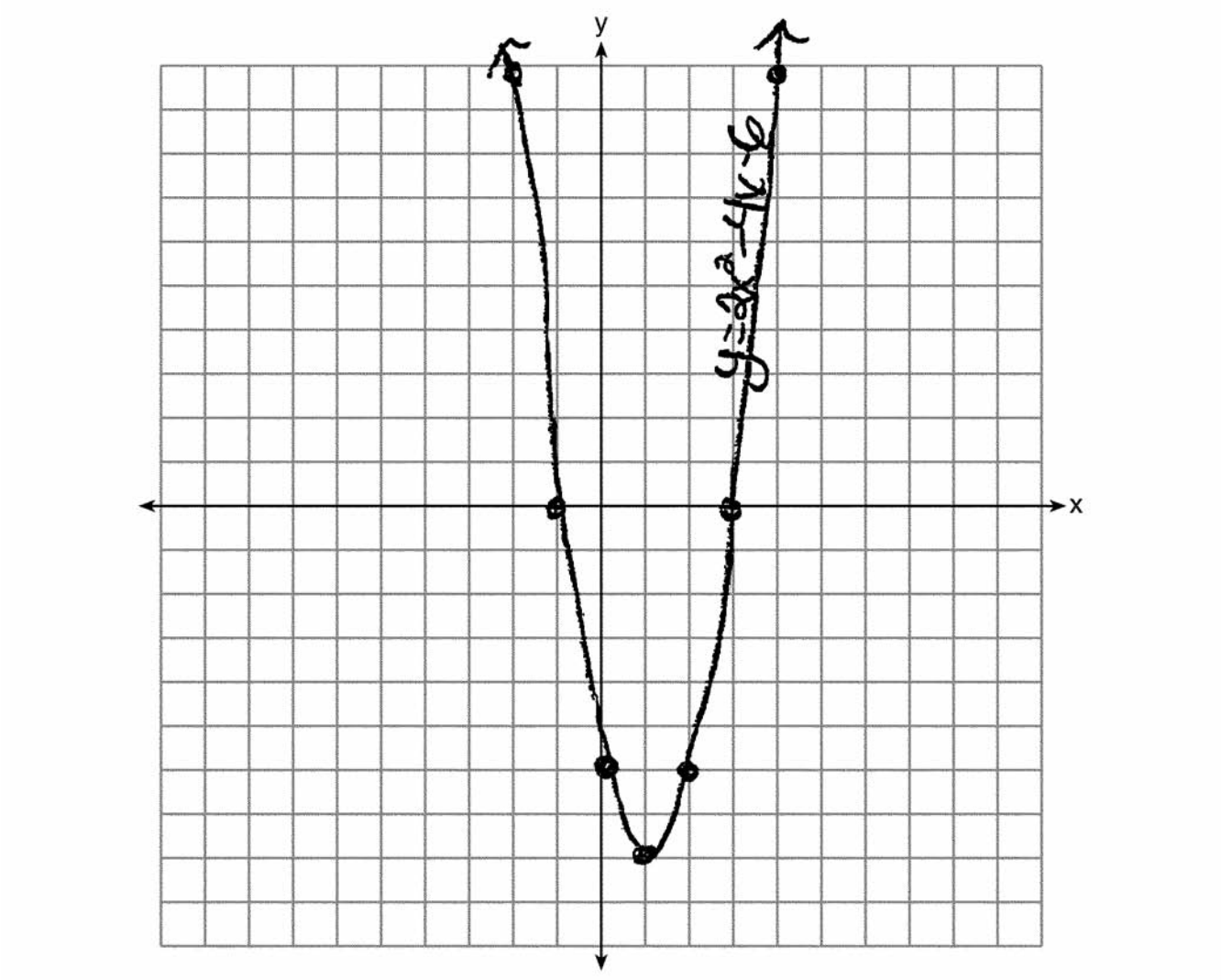
Score 3: The student drew a correct graph, but expressed the roots as coordinates.

Question 37

37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

State the roots of $0 = 2x^2 - 4x - 6$.



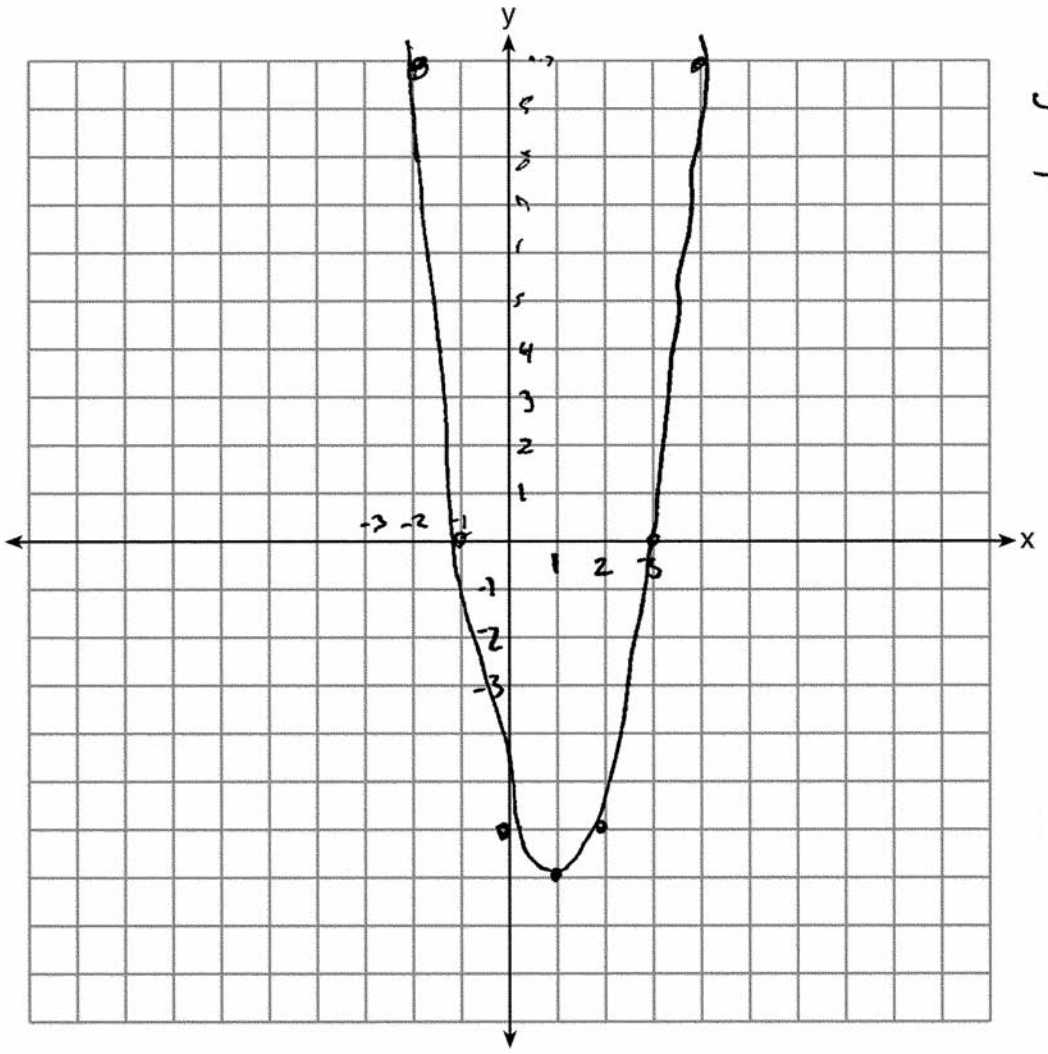


Score 3: The student drew a correct graph, but stated only one root, 3.

Question 37

37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

State the roots of $0 = 2x^2 - 4x - 6$.



$y = 2x^2 - 4x - 6$

x	
-2	10
-1	0
0	-6
1	-8
2	-6
3	0
4	10

$x = -1$ $x = 3$

Score 3: The student made one graphing error when plotting the vertex, but stated the correct roots.

Question 37

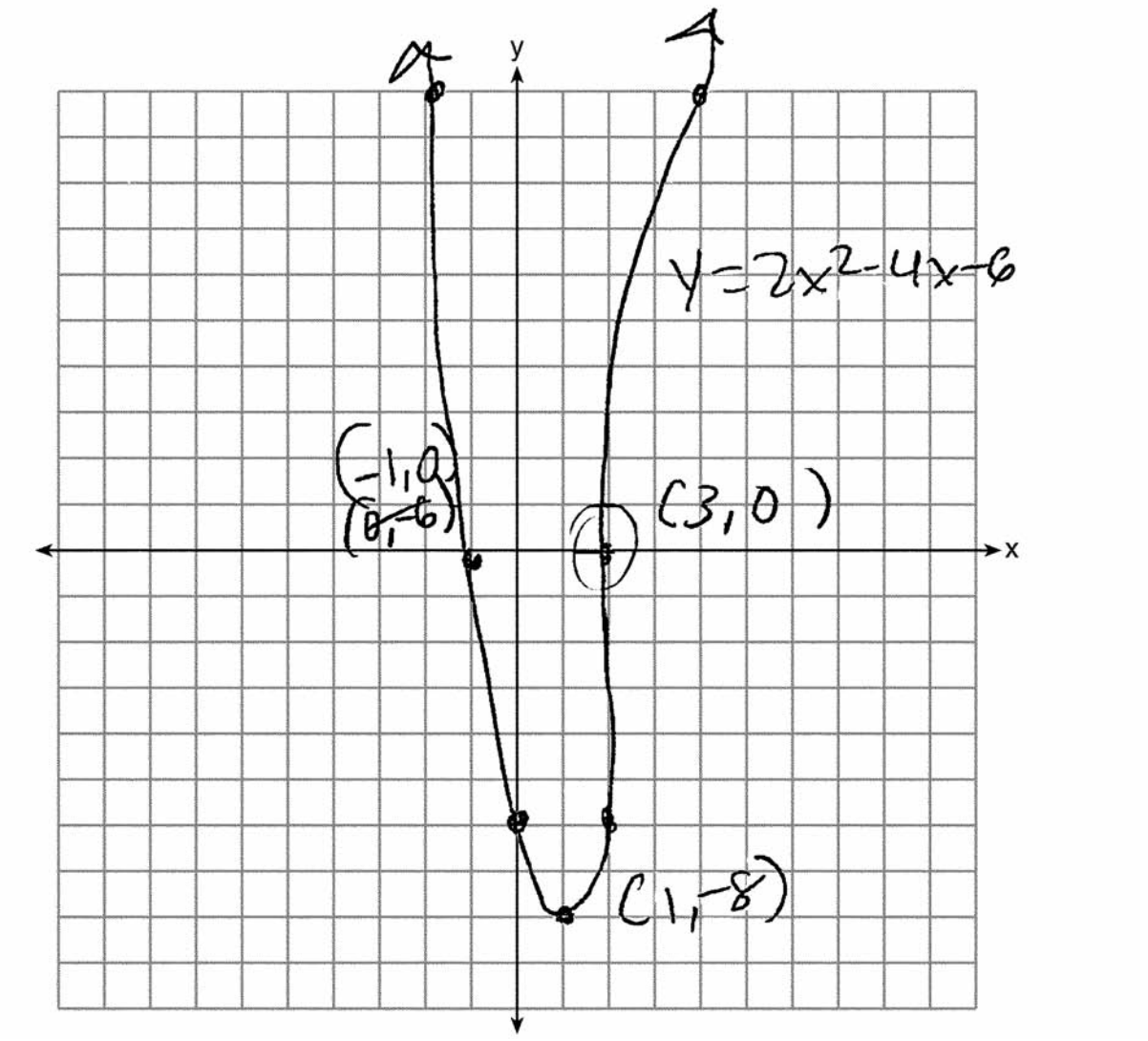
37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

State the roots of $0 = 2x^2 - 4x - 6$.

roots (-1, 0)

(3, 0)

$2(x^2 - 2x - 3)$



Score 2: The student made one graphing error and stated the roots as coordinates.

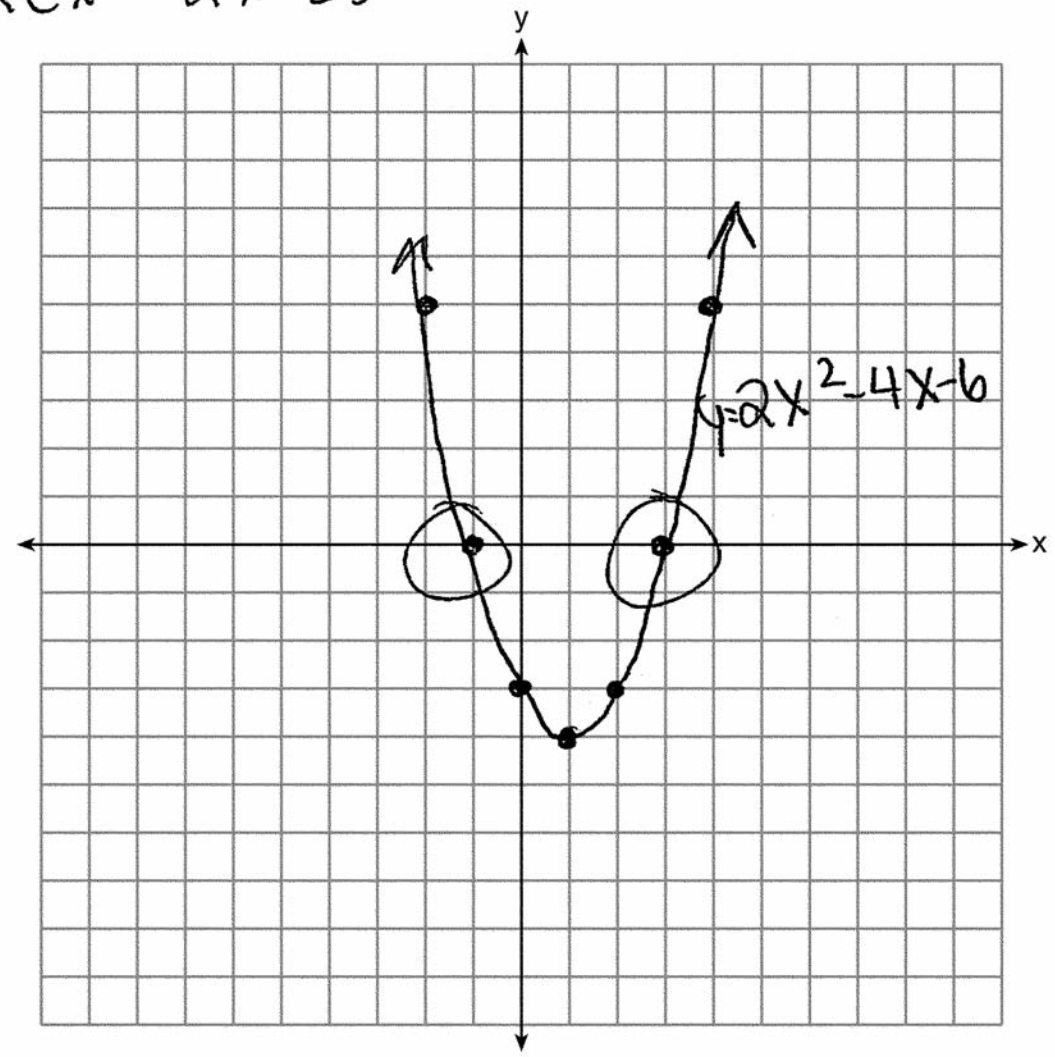
Question 37

37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

State the roots of $0 = 2x^2 - 4x - 6$.

X=-1 and X=3

2(x²-2x-3)

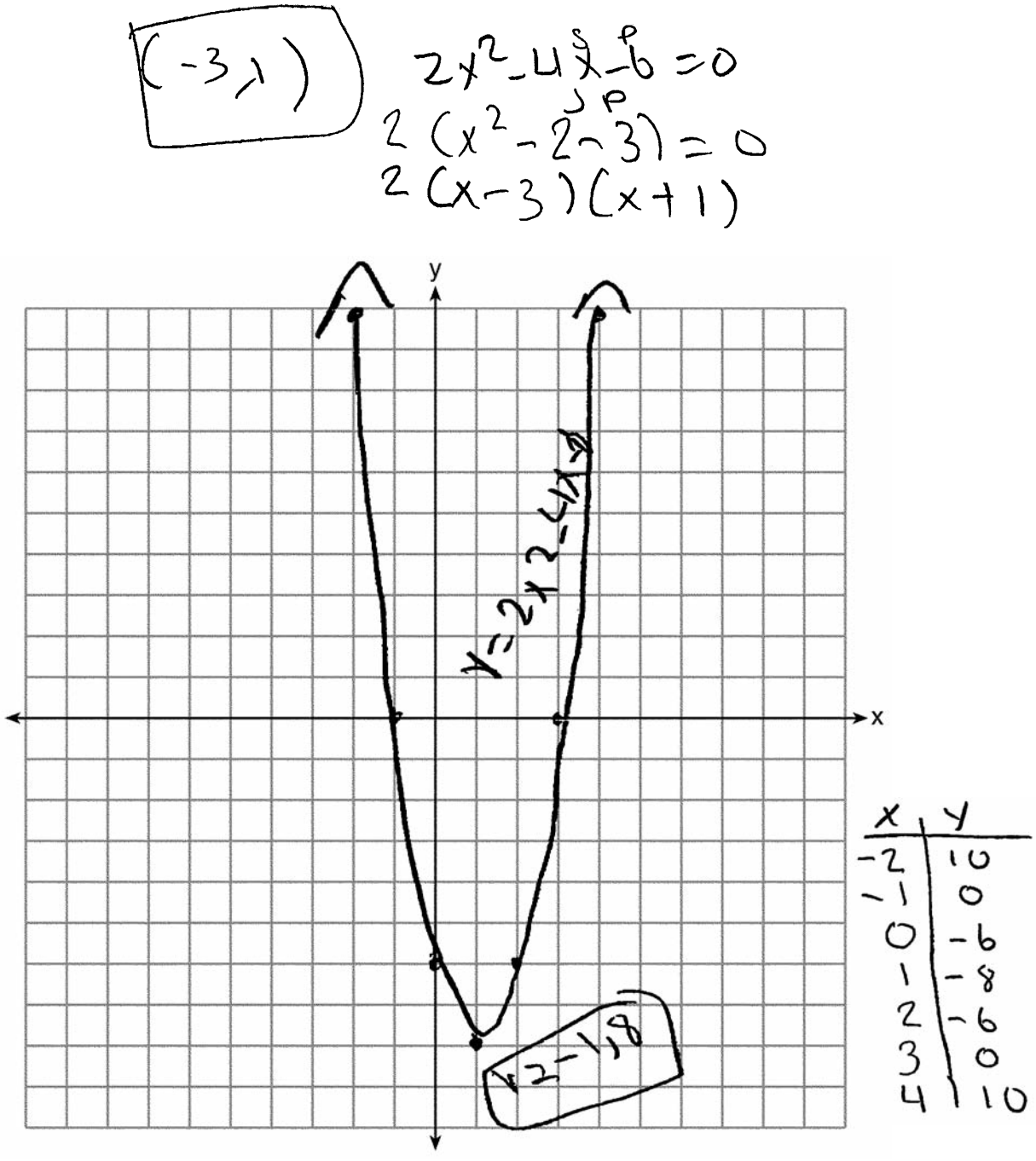


Score 2: The student made one conceptual error by factoring out a 2 and graphing $y = x^2 - 2x - 3$. The student stated the appropriate roots.

Question 37

37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

State the roots of $0 = 2x^2 - 4x - 6$.



Score 2: The student drew a correct graph, but showed no further correct work.

Question 37

37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

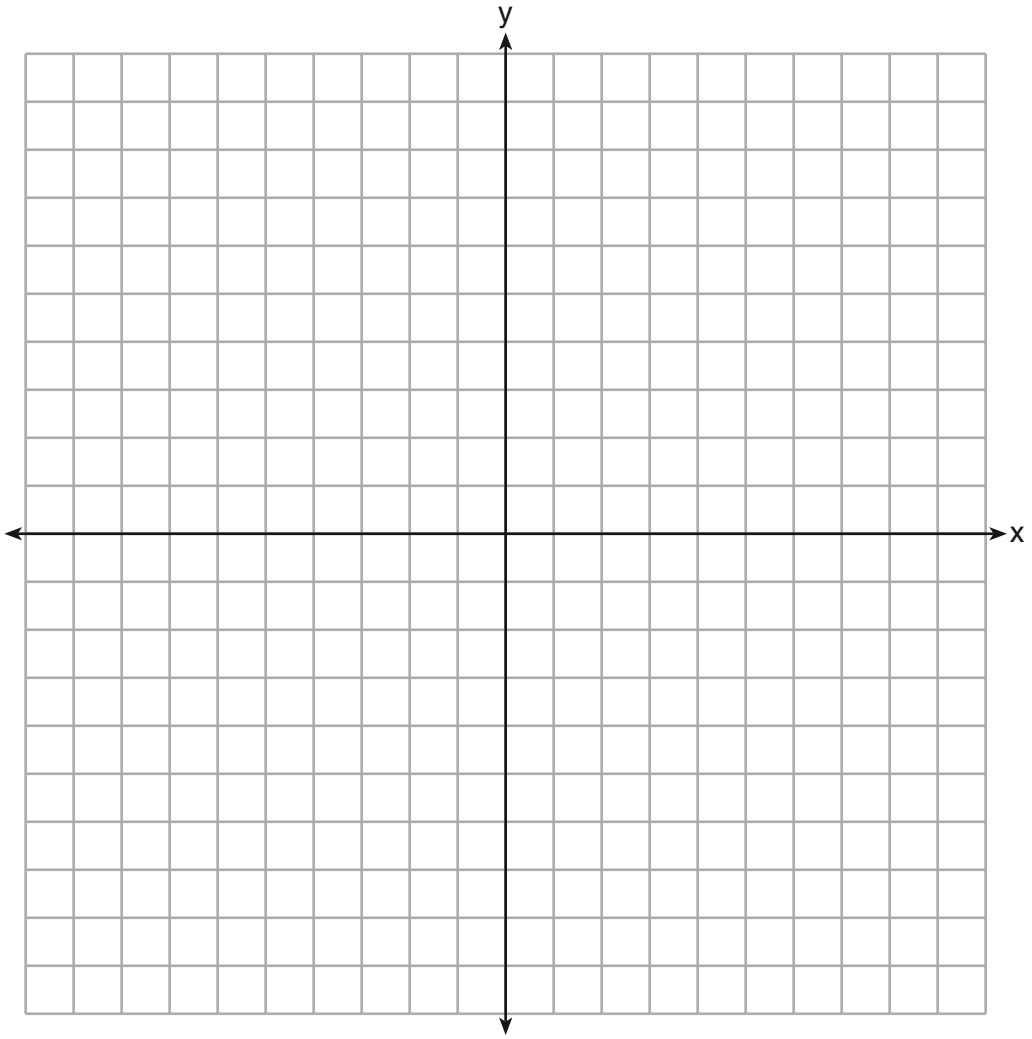
State the roots of $0 = 2x^2 - 4x - 6$.

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

$x+1=0 \quad x-3=0$

$-1 \quad -1$

$x=-1 \quad x=3$



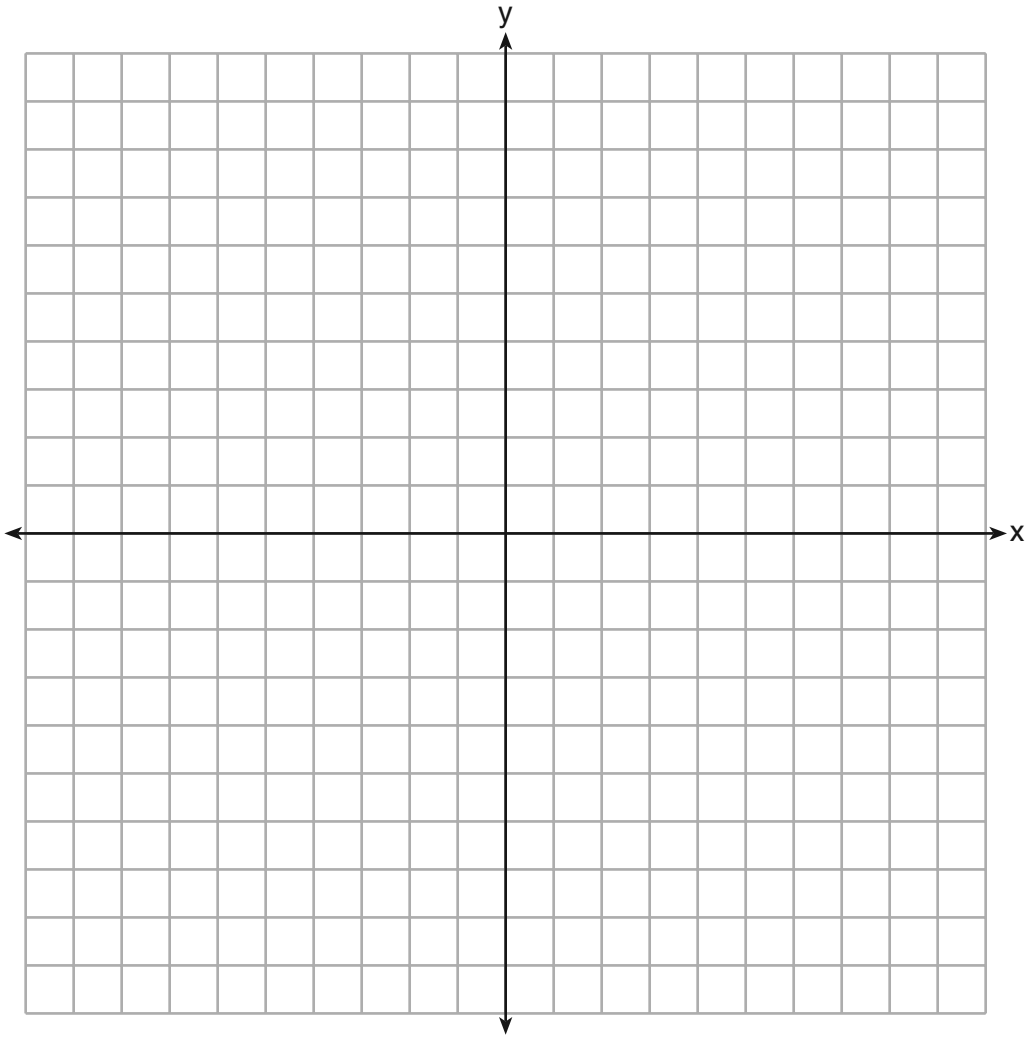
Score 2: The student showed appropriate work to find −1 and 3, but did not draw a graph.

Question 37

37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

State the roots of $0 = 2x^2 - 4x - 6$.

$y=2(x+1)(x-3)$
$x+1=0 \quad x-3=0$
$-1 \quad -1$
$x=-1 \quad x=3$
$(-1,0) \quad (3,0)$



Score 1: The student showed appropriate work to find -1 and 3, but did not draw a graph and stated the roots as coordinates.

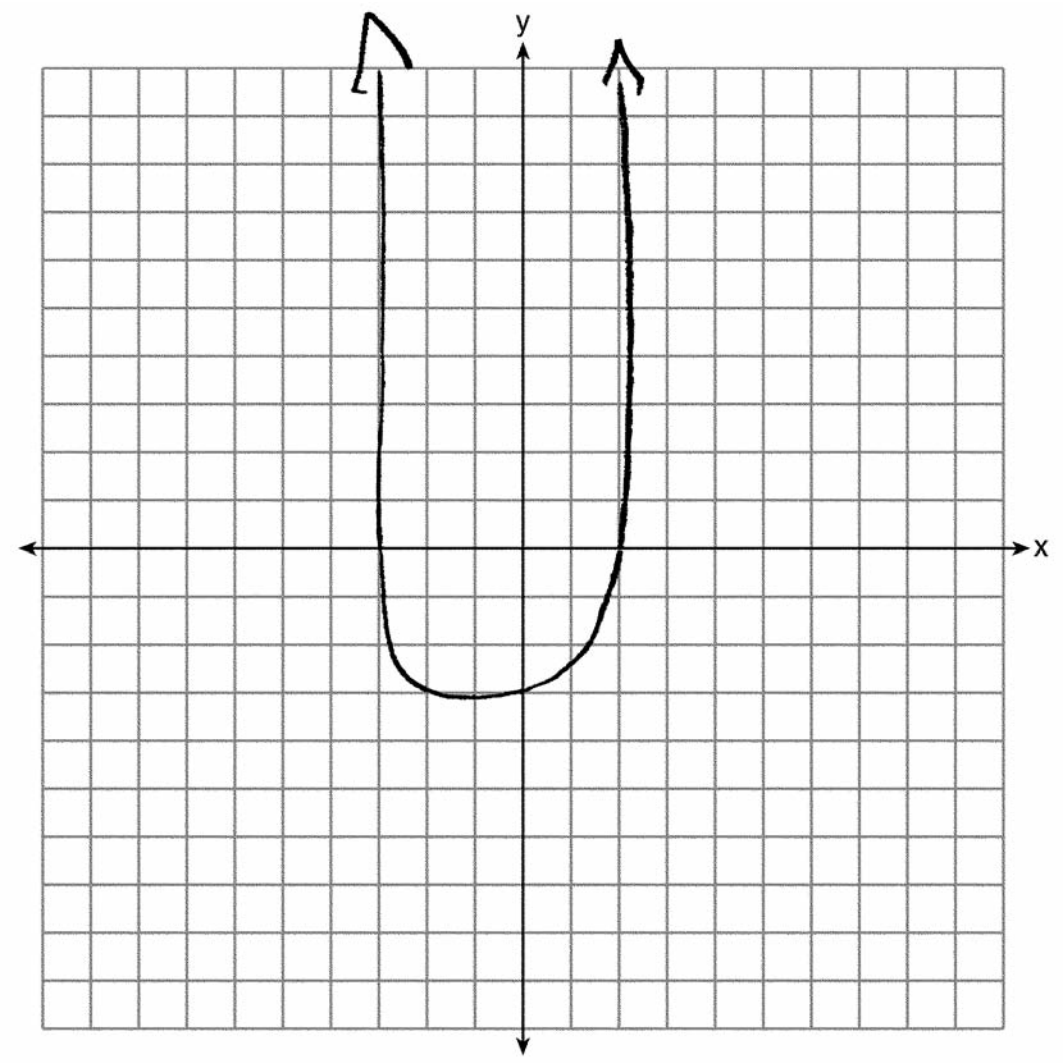
Question 37

37 On the set of axes below, graph $y = 2x^2 - 4x - 6$.

State the roots of $0 = 2x^2 - 4x - 6$.

-1,0

3,0

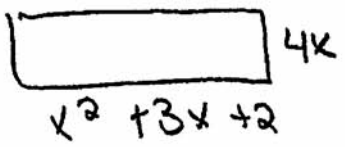


Score 0: The student stated −1,0 and 3,0 and drew a completely incorrect graph.

Question 38

38 The length of a rectangle is represented by $x^2 + 3x + 2$, and the width is represented by $4x$.

Express the perimeter of the rectangle as a trinomial.



$P = s_1 + s_2 + s_3 + s_4$

$P = 4x + 4x + x^2 + 3x + 2 + x^2 + 3x + 2$

$P = 2x^2 + 14x + 4$

length $= x^2 + 3x + 2$

width $= 4x$

Express the area of the rectangle as a trinomial.

$A = l \cdot w$

$A = 4x(x^2 + 3x + 2)$

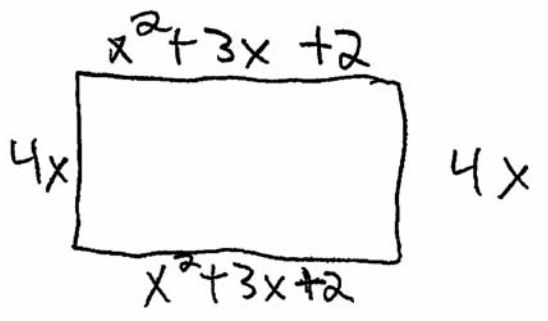
$A = 4x^3 + 12x^2 + 8x$

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

Question 38

38 The length of a rectangle is represented by $x^2 + 3x + 2$, and the width is represented by $4x$.

Express the perimeter of the rectangle as a trinomial.



$2(x^2+3x+2) \quad 2(4x)$

$2x^2+3x+4+8x =$ Perimeter $2x^2+11x+4$

Express the area of the rectangle as a trinomial.

$4x(x^2+3x+2) = 2$

$4x^3+12x^2+8x$

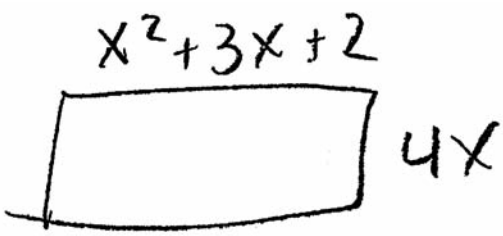
Area

Score 3: The student made one computational error when distributing.

Question 38

38 The length of a rectangle is represented by $x^2 + 3x + 2$, and the width is represented by $4x$.

Express the perimeter of the rectangle as a trinomial.



$P = x^2 + 3x + 2 + 4x$

$P = x^2 + 7x + 2$

Express the area of the rectangle as a trinomial.

$A = b \cdot h$

$A = 4x(x^2 + 3x + 2)$

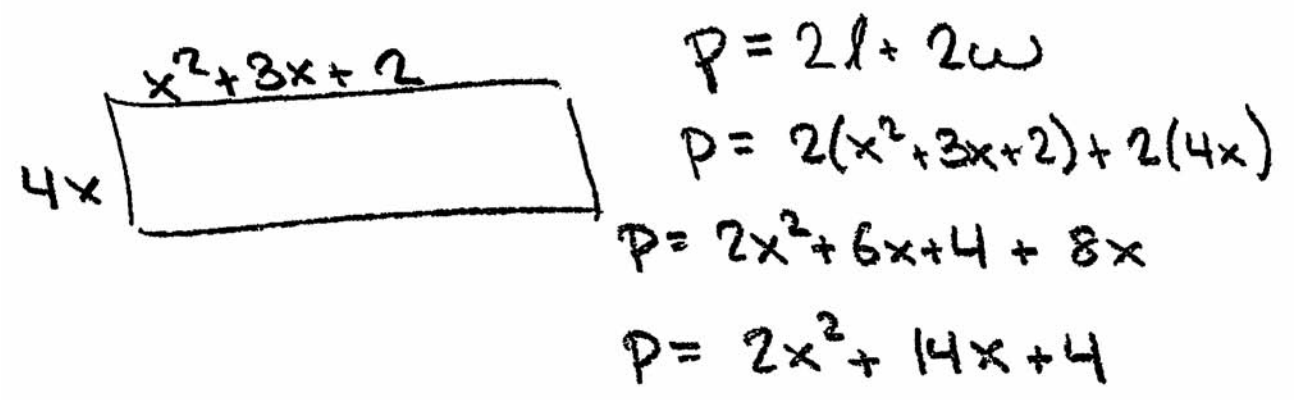
$A = 4x^3 + 12x^2 + 8x$

Score 2: The student made a conceptual error when finding the perimeter.

Question 38

38 The length of a rectangle is represented by $x^2 + 3x + 2$, and the width is represented by $4x$.

Express the perimeter of the rectangle as a trinomial.



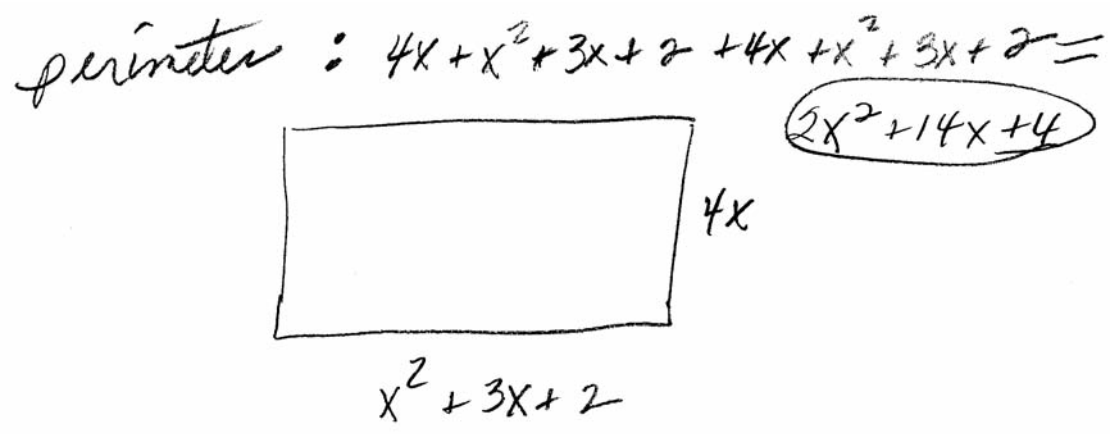
Express the area of the rectangle as a trinomial.

Score 2: The student only found the perimeter correctly.

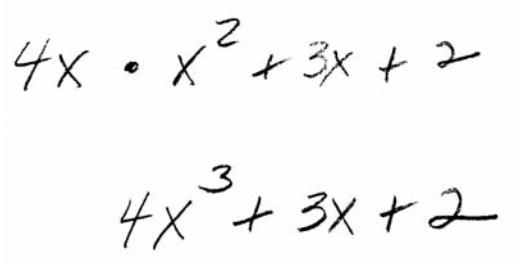
Question 38

38 The length of a rectangle is represented by $x^2 + 3x + 2$, and the width is represented by $4x$.

Express the perimeter of the rectangle as a trinomial.



Express the area of the rectangle as a trinomial.

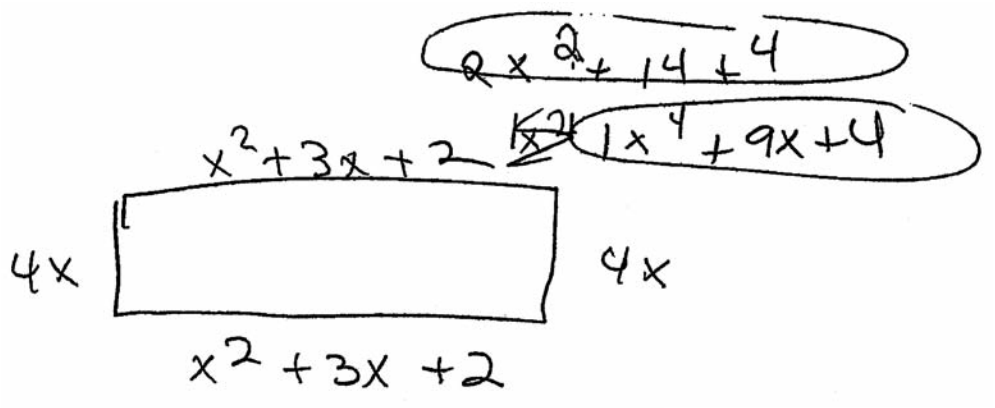


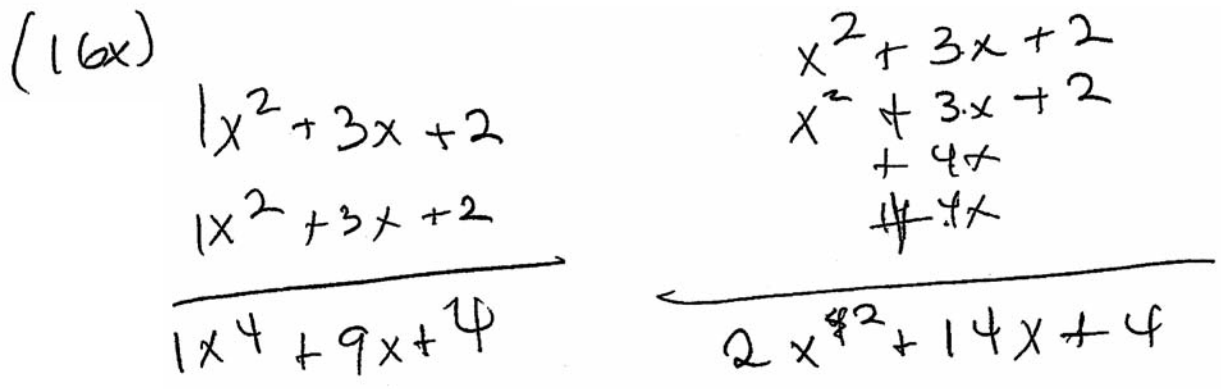
Score 2: The student correctly found the perimeter, but made a conceptual error in finding the area.

Question 38

38 The length of a rectangle is represented by $x^2 + 3x + 2$, and the width is represented by $4x$.

Express the perimeter of the rectangle as a trinomial.





Express the area of the rectangle as a trinomial.

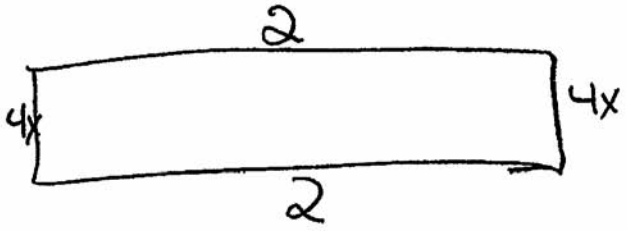
Score 1: The student correctly calculated the perimeter, but transcribed the circled answer incorrectly (the x has been left out). The student calculated the area incorrectly.

Question 38

38 The length of a rectangle is represented by $x^2 + 3x + 2$, and the width is represented by $4x$.

Express the perimeter of the rectangle as a trinomial.

$x^2 + 3x + 2 = 2$



Perimeter $= 2 \cdot 2$

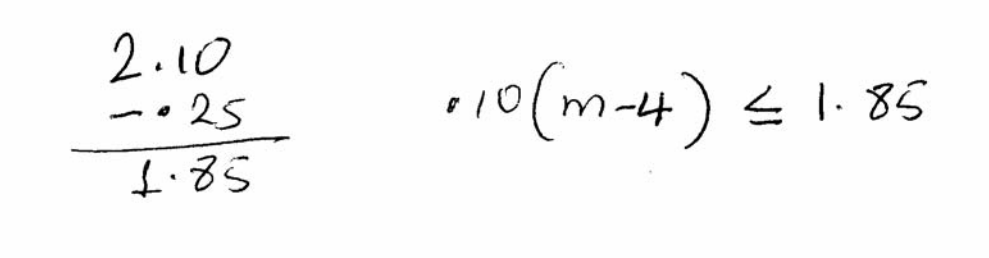
Express the area of the rectangle as a trinomial.

area $= 4x \cdot 4x$

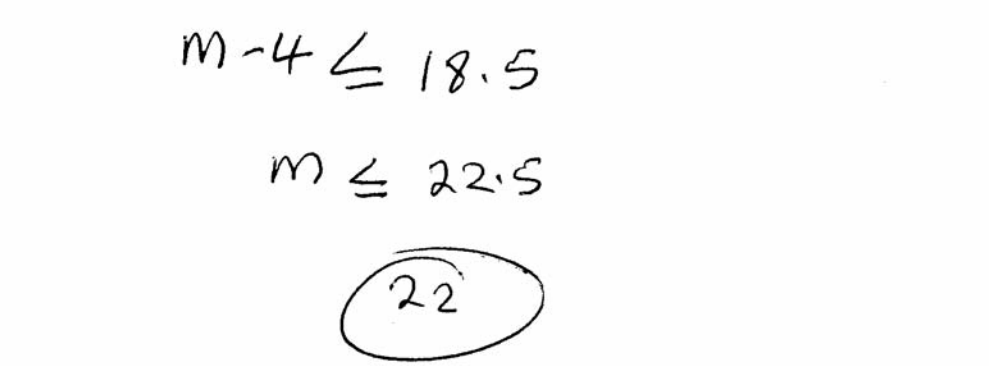
Score 0: The student showed no correct work.

Question 39

39 Tony makes a phone call at a pay phone. The charge is 25 cents for the first four minutes, and 10 cents for each additional minute. Tony has $2.10 in change in his pocket. Write an inequality that can be used to find m, the maximum number of minutes that Tony can talk on the phone.



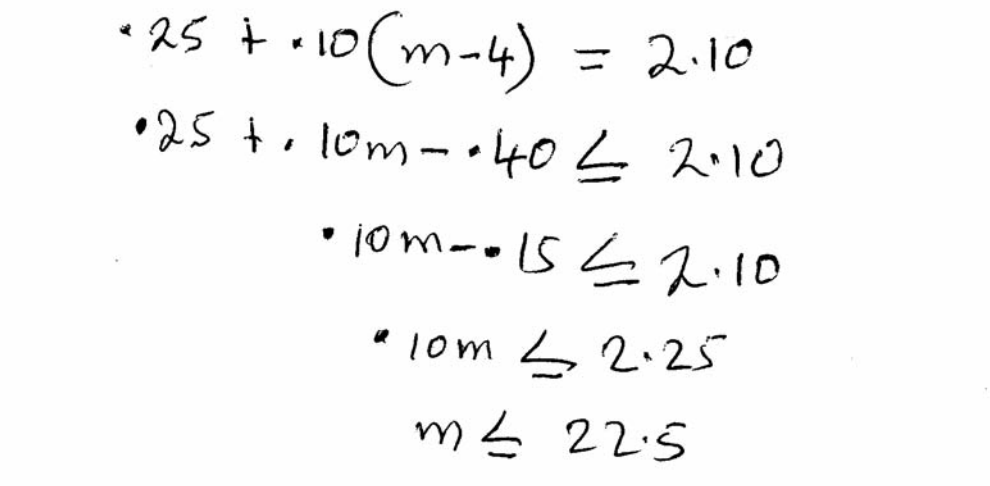
Solve this inequality algebraically to find the maximum number of whole minutes he can talk on the phone.



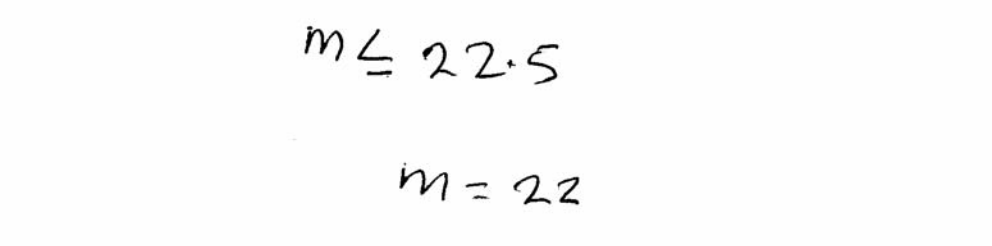
Score 4: The student has a complete and correct response.

Question 39

39 Tony makes a phone call at a pay phone. The charge is 25 cents for the first four minutes, and 10 cents for each additional minute. Tony has $2.10 in change in his pocket. Write an inequality that can be used to find m, the maximum number of minutes that Tony can talk on the phone.



Solve this inequality algebraically to find the maximum number of whole minutes he can talk on the phone.



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

Question 39

39 Tony makes a phone call at a pay phone. The charge is 25 cents for the first four minutes, and 10 cents for each additional minute. Tony has $2.10 in change in his pocket. Write an inequality that can be used to find m, the maximum number of minutes that Tony can talk on the phone.

$.25 + .10(m - 4) \leq 2.10$

Solve this inequality algebraically to find the maximum number of whole minutes he can talk on the phone.

$.25 + .10m - .4 \leq 2.10$

$.10m - .15 \leq 2.10$

$.10m \leq 2.25$

$m \leq 22.5$

Score 3: The student wrote the correct inequality and solved it to find $m \leq 22.5$. The student did not find the maximum number of whole minutes.

Question 39

39 Tony makes a phone call at a pay phone. The charge is 25 cents for the first four minutes, and 10 cents for each additional minute. Tony has $2.10 in change in his pocket. Write an inequality that can be used to find m, the maximum number of minutes that Tony can talk on the phone.

$.25 + .10(m-4) \leq 2.10$

Solve this inequality algebraically to find the maximum number of whole minutes he can talk on the phone.

$.25 + .10(m-4) \leq 2.10$

$\frac{.10}{.10}(m-4) \leq \frac{2.35}{.10}$

$m - 4 \leq 23.5$

$m \leq 27.5$

$m = 27$

Score 3: The student wrote a correct inequality, but made one computational error in solving it. The student found an appropriate maximum number of minutes.

Question 39

39 Tony makes a phone call at a pay phone. The charge is 25 cents for the first four minutes, and 10 cents for each additional minute. Tony has $2.10 in change in his pocket. Write an inequality that can be used to find m, the maximum number of minutes that Tony can talk on the phone.

$.25(4) + .10x \leq 2.10$

Solve this inequality algebraically to find the maximum number of whole minutes he can talk on the phone.

$.25(4) + .10x \leq 2.10$

$1 + .10x \leq 2.10$

$\frac{.10x}{.10} \leq \frac{1.10}{.10}$

$x \leq 11$

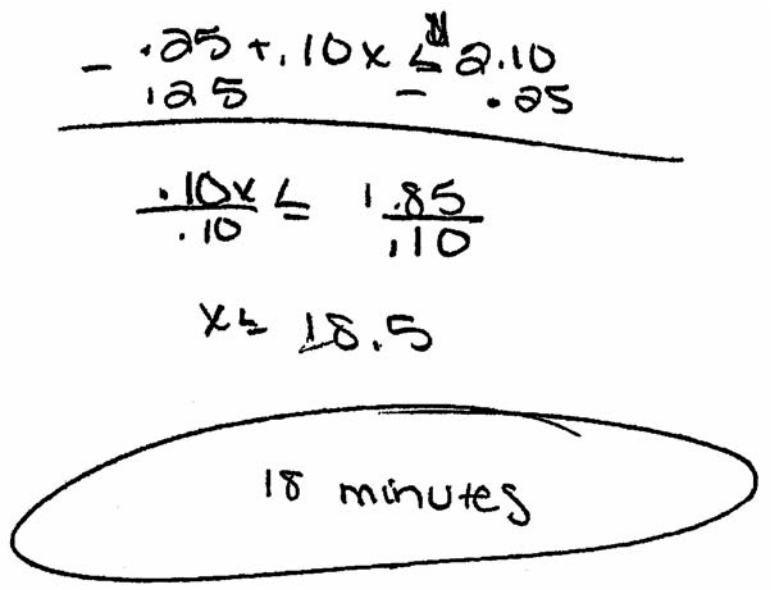
11 min

Score 2: The student made a conceptual error in writing the inequality, but solved it appropriately to find the maximum number of minutes.

Question 39

39 Tony makes a phone call at a pay phone. The charge is 25 cents for the first four minutes, and 10 cents for each additional minute. Tony has $2.10 in change in his pocket. Write an inequality that can be used to find m, the maximum number of minutes that Tony can talk on the phone.

Solve this inequality algebraically to find the maximum number of whole minutes he can talk on the phone.



Score 2: The student made a conceptual error in writing the inequality, but solved it appropriately to find the maximum number of minutes.

Question 39

39 Tony makes a phone call at a pay phone. The charge is 25 cents for the first four minutes, and 10 cents for each additional minute. Tony has $2.10 in change in his pocket. Write an inequality that can be used to find m, the maximum number of minutes that Tony can talk on the phone.

$.25m + .10 \leq 2.10$

Solve this inequality algebraically to find the maximum number of whole minutes he can talk on the phone.

.35 = 5 min
.45 = 6 min
.55 = 7 min
.65 = 8 min
.75 = 9 min
.85 = 10 min
.95 = 11 min
1.05 = 12 min
1.15 = 13 min
1.25 = 14 min
1.35 = 15 min
1.45 = 16 min
1.55 = 17 min
1.65 = 18 min
1.75 = 19 min
1.85 = 20
1.95 = 21
2.05 = 22

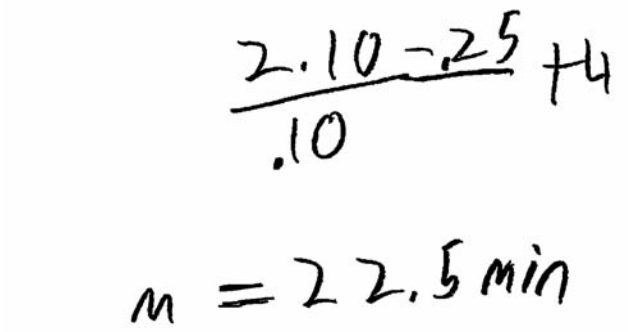
22 minutes

Score 2: The student used a method other than algebraic to find the 22 minutes.

Question 39

39 Tony makes a phone call at a pay phone. The charge is 25 cents for the first four minutes, and 10 cents for each additional minute. Tony has $2.10 in change in his pocket. Write an inequality that can be used to find m, the maximum number of minutes that Tony can talk on the phone.

Solve this inequality algebraically to find the maximum number of whole minutes he can talk on the phone.

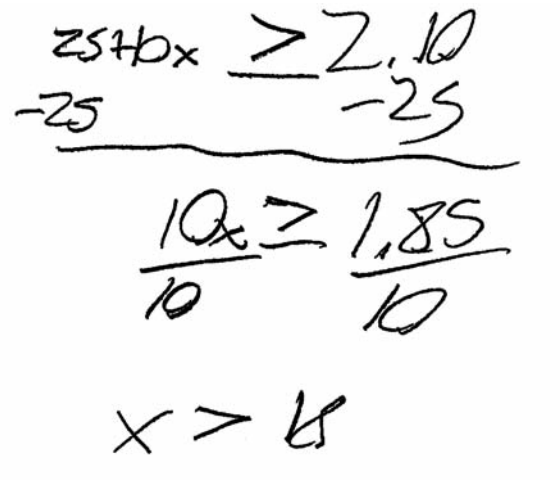


Score 1: The student did not write a correct inequality, but found $m = 22.5$, arithmatically. The student did not find the maximum number of whole minutes.

Question 39

39 Tony makes a phone call at a pay phone. The charge is 25 cents for the first four minutes, and 10 cents for each additional minute. Tony has $2.10 in change in his pocket. Write an inequality that can be used to find m, the maximum number of minutes that Tony can talk on the phone.

Solve this inequality algebraically to find the maximum number of whole minutes he can talk on the phone.



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