Algebra 1

April 6 – April 9

Time Allotment: 40 minutes per day

Student Name: _____

Teacher Name: _____

Teacher emails: Vanessa.steger@greatheartsnorthernoaks.org and melanie.brintnall@greatheartsnorthernoaks.org. Ms. Brintnall will be teaching Mrs. Chubb's Algebra 1 class for the remainder of the school. If you were in Mrs. Chubb's class, you should email Ms. Brintnall for help if needed!

Algebra 1
March 30 – April 3

Packet Overview

Date	Objective(s)	Page Number
Monday, March 30	Students will be able to solve quadratic equations by completing the square. (12-2)	
Tuesday, March 31	Students will be able to solve quadratic equations by completing the square. (12-2)	
Wednesday, April 1	Review: Completing the square Minor Assessment	
Thursday, April 2	Students will be able to solve quadratic equations using the quadratic formula. (12-3)	
Friday, April 3	No school	

Dear Algebra 1 students,

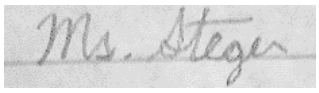
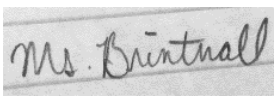
We hope that everything is going well with you and your families. Once again, it was great to hear from many of you last week! We enjoy answering your questions – keep asking away!

This week, you will continue to solve quadratic equations. On Monday and Tuesday, we will be covering a method of solving quadratic equations called "Completing the Square". While this corresponds to section 12-2 of our textbook, we will be using a different method than the one outlined there. We have recommended videos for these days that will supplement the guided notes provided.

We are also excited to offer Office Hours through Zoom this week! Your parents will receive a schedule via email with further details about how to log on. However, write down the time slot for your class period so you know when it takes place:

Class	Day/Time
1st Period Ms. Steger	Monday & Wednesday, 10:00 – 10:50am
2nd Period Ms. Steger	Monday & Wednesday, 11:00 – 11:50am
3rd Period Ms. Brintnall	Monday & Wednesday, 1:00 – 1:50pm
4th Period Ms. Brintnall	Tuesday & Thursday, 10:00 – 10:50am

Know that we are thinking of you as you continue learning remotely! No question is too small, so *please* send us an email if you are wondering about anything! We would love to hear how you are doing 😊

With much love,  and 

Algebra 1
March 30 – April 3

Just like previous weeks, to start, gather pieces of loose-leaf and STAPLE them together (any kind of lined paper or graph paper will do – you will only need about 10 sheets this week). Put your name on the very top of EVERY PAGE (front and back) of these loose-leaf papers, just like you did last week.

This is the equivalent of your notebook during class, and we will refer to it throughout this packet as you "loose-leaf packet." We will ask you to write certain problems with particular titles, and all of this will be done in that loose-leaf packet. **At a later point, we will ask you to turn in that loose-leaf packet. Do not worry right now about whether that will be online or in person, simply do the problems as we instruct with the proper titles and labels.**

☐ ***I have gathered around 10 pieces of lined paper, put my name at the very top of every sheet on both the front and the back, and stapled them. I am ready to go!***

"Do not worry about your difficulties in Mathematics. I can assure you mine are still greater."
Albert Einstein

Academic Honesty

I certify that I completed this assignment independently in accordance with the GHNO Academy Honor Code. Right now in my Algebra I class, this means that I will NOT use a calculator except to check my answers when I am finished with them.

Student signature:

_____

I certify that my student completed this assignment independently in accordance with the GHNO Academy Honor Code. Right now in this Algebra I class, this means that the student will NOT use a calculator except to check answers when finished with them.

Parent signature:

_____

Algebra 1
March 30 – April 3

Monday, April 6

Algebra 1 Unit: Quadratic Equations
Lesson 1: 12-2 Completing the Square

Objective: Solve quadratic equations by completing the square.

NOTES TITLE: (This will appear at the beginning of each lesson so you can title your notes for the day.)

Your Name

Lesson 1: 12-2 Completing the Square

Bellwork: Review vocabulary.

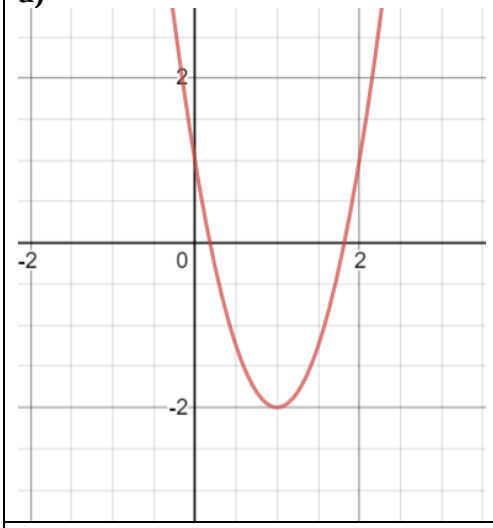
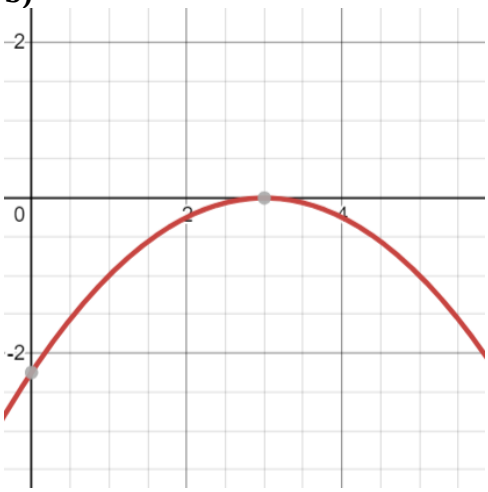
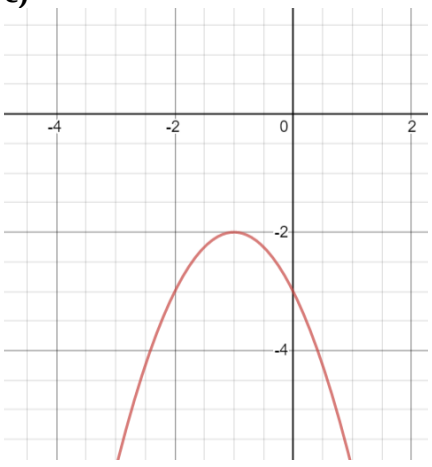
1. What is a solution?

   _____

2. List 3 synonyms for "x-intercept":
   - _____
   - _____
   - _____

Check your answers on Day 1 of the answer key.

Number of Roots:
Look at the following **parabolas**. How many **roots** (x-intercepts, solutions, zeros) does each one have?

a)	**b)**	**c)**
		
Number of Roots: _____	**Number of Roots: _____**	**Number of Roots: _____**

Algebra 1
March 30 – April 3

Activity #1

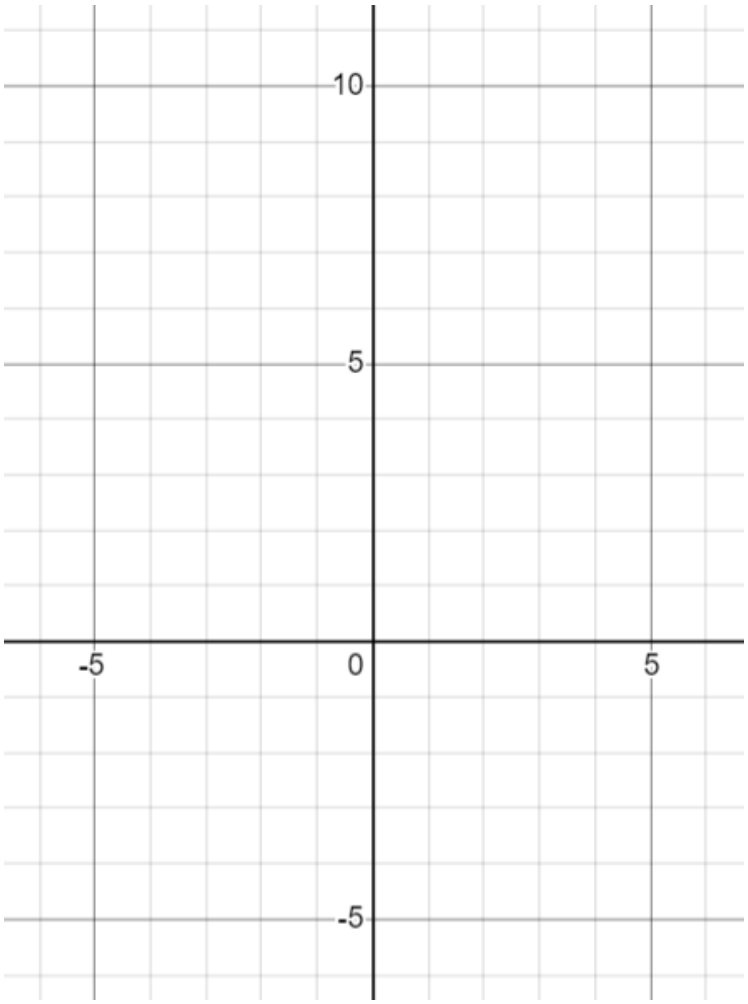
For the following equations, solve the equation using SADMEP (just like you practiced on Friday). Then, plug in 5 different values for x to complete the table of values to graph the equation. Fill in the blanks underneath the graph with the coordinates for the x-intercepts. Use your loose-leaf packet for scratch work. HINT: When choosing inputs to use, look at the graph given. Choose values along the x-axis!

1a) $\frac{x^2-9}{2} = 0$

Solutions: _____

1b) $y = \frac{x^2+9}{2}$

x	y



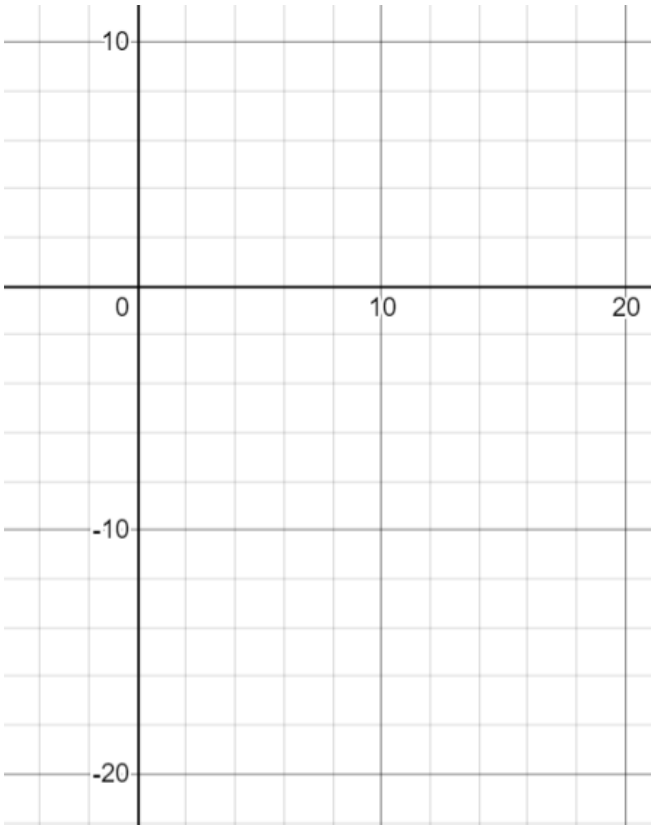
Solutions: (____, ____), (____, ____)

2a) $-(x-5)^2+9=0$

Solutions: _____

2b) $y=-(x-5)^2+9$

x	y



Solutions: (____, ____), (____, ____)

3) What was the difference in the equations given in part a) vs. part b) questions 1 and 2 above?

_____

_____

4) What do you notice about the solutions you found for part a) and part b) for questions 1 and 2 above?

_____

_____

5) When we find the solutions to a quadratic equation, we are actually finding the (circle one):

(a) y-intercepts (b) vertex (c) x-intercepts (d) axis of symmetry

Activity #2

Solve in you loose-leaf packet. HINT: Start by factoring the left side of each equation.

1. $x^2 + 14x + 49 = 36$	2. $25c^2 - 10c + 1 = 16$	3. $x^2 - 2x + 1 = 12$

4. What factoring pattern appeared in both 1) and 2) above? _____

NOTES: **Completing the Square - Part I**

Copy the three examples (not the written notes) into your notes packet. The following video will help you: https://www.youtube.com/watch?v=OZNHYZXbLY8

In Activity #2 #1-3, we had perfect square trinomials that we could factor. This made it very easy to solve, because we could take the square root of a binomial squared.

Let's look at the following equation:

Ex. 1 $x^2 - 4x + 3 = 80$

	x	-2
x	x^2	$-2x$
-2	$-2x$	4

We can try to factor, but it's not a PST! In order for it to be a PST, we would need a 4, not a 3, in the bottom left corner.

We don't currently have a PST, but we could create one by adding 1 to both sides! Remember, whatever we do to one side, we must do to the other!

$x^2 - 4x + 3 = 80$
$\quad +1 \quad +1$
$x^2 - 4x + 4 = 81$ Factor.
$(x-2)^2 = 81$
$\sqrt{(x-2)^2} = \sqrt{81}$ Take the square root of both sides.
$|x-2| = 9$ Account for both solutions.

$|x-2| = 9$

$x - 2 = 9 \qquad x - 2 = -9$
$+2 \quad +2 \qquad +2 \quad +2$
$x = 11 \qquad x = -7$ Final Answer

Ex. 2 Let's look at a 2nd example.

$x^2 - 6x = -8$ I want to build a PST on the left. I know that PSTs always have matching boxes in the top right / bottom left. SO, I can take the $-6x$ middle term and evenly split it in half.

	x	-3
x	x^2	$-3x$
-3	$-3x$	

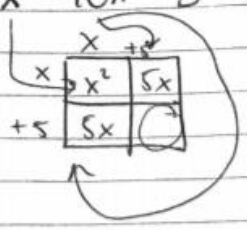
Then, I notice that the binomials must be $x-3$ and $x-3$. That would mean the final box has to be a 9.

	x	-3
x	x^2	$-3x$
-3	$-3x$	9

However, I don't have a 9 there. So, I must add one to both sides to complete the perfect square.

$x^2 - 6x = -8$
$+9 \quad +9$
$x^2 - 6x + 9 = 1$ Now, factor.
$\sqrt{(x-3)^2} = \sqrt{1}$
$|x-3| = 1$
$x - 3 = 1 \quad x - 3 = -1$
$\boxed{x = 4} \quad \boxed{x = 2}$

Ex. 3 $x^2 + 10x - 3 = 0$



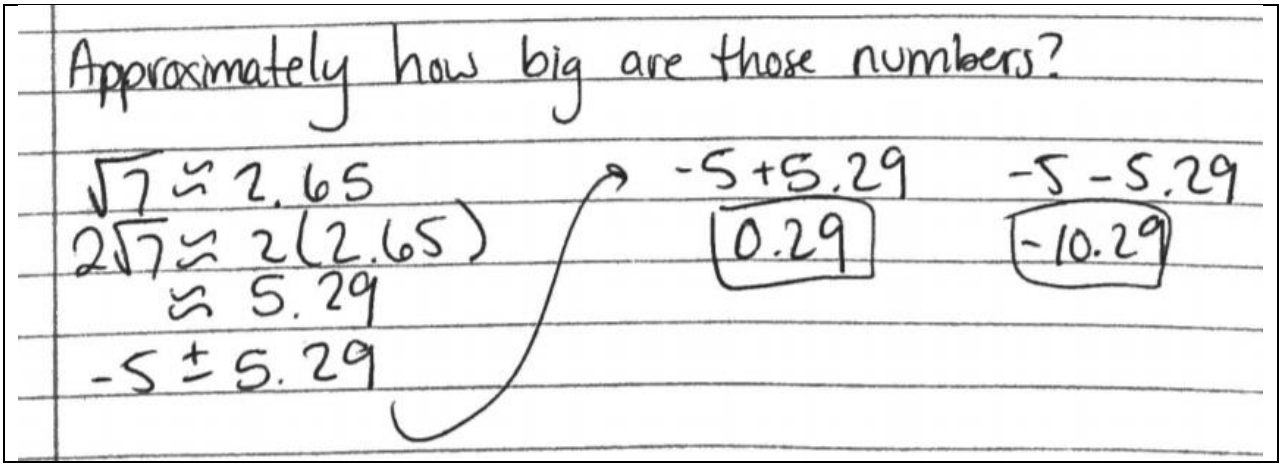
Once again, we want to build a PST.

We will have $(x+5)(x+5)$ and need to have 25 in the last box. However, we currently have -3. What do we need to add to both sides so that the constant term is 25?

$x^2 + 10x - 3 = 0$
$+28 \quad +28$ Add 28 to both sides.
$x^2 + 10x + 25 = 28$ Factor.
$(x+5)^2 = 28$ Take the square root of both sides.
$\sqrt{(x+5)^2} = \sqrt{28}$
$|x+5| = \sqrt{4} \cdot \sqrt{7}$
$|x+5| = 2\sqrt{7}$ Account for both solutions.

$x + 5 = 2\sqrt{7}$ $\quad$ $x + 5 = -2\sqrt{7}$
$-5 \quad -5$ $\quad$ $-5 \quad -5$
$\boxed{x = -5 + 2\sqrt{7}}$ $\quad$ $\boxed{x = -5 - 2\sqrt{7}}$

OR, we can combine them to write
$\boxed{x = -5 \pm 2\sqrt{7}}$



Daily Practice: Solve the equations by completing the square in your notes packet.

1) $x^2 - 4x = 1$	2) $c^2 + 18c - 175 = 0$	3) $v^2 - 20v + 19 = 0$

When finished, check your answers with the answer key in the back of the packet.
My questions at the end of Algebra 1 Lesson 1 (if any):

_____

_____

_____

_____

What action are you going to take to try to answer these questions? ☐ Ask my parent or family member. ☐ Have my parent help me email Ms. Steger or Ms. Brintnall. ☐ I may have to hold on to this question for a later time.	☐ ***I have completed all parts of today's lesson, checked my answers, recorded my questions (if any), and made a plan for answering my questions if needed. I am finished with Lesson 1 of Algebra 1 for Monday, March 30th!***

Tuesday, April 7

Algebra 1 Unit: Quadratic Equations
Lesson 2: 12-2 Completing the Square (Continued)

Objective: Solve quadratic equations by completing the square.

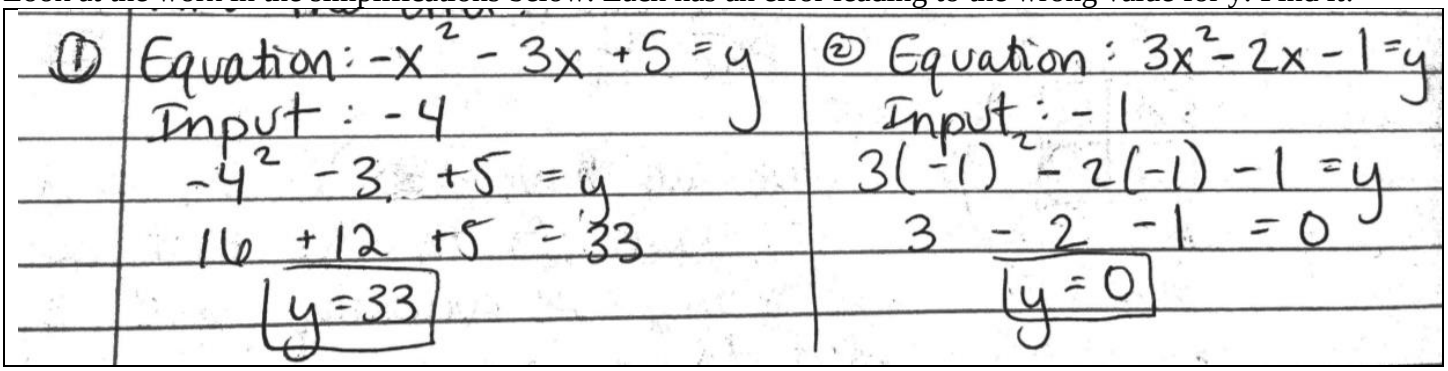
NOTES TITLE:

Your Name

Lesson 2: 12-2 Completing the Square

Algebra 1
March 30 – April 3

Bellwork:
Look at the work in the simplifications below. Each has an error leading to the wrong value for y. Find it!



Error #1:

_____

_____

Error #2:

_____

_____

Check your answers with the answer page at the back of the packet.

Activity #1

1a) Solve by completing the square. Then, find approximate solutions if need be. You may use a calculator to help you find the approx. solutions.

$$x^2 + 8x - 10 = 0$$

Exact Solutions:

_____

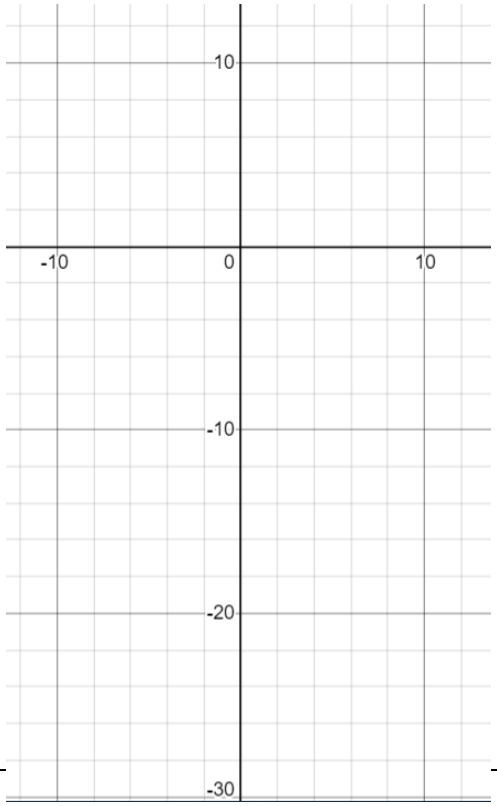
1b) Make a table of values and graph. Use your notes packet for calculating points for your table of values.

$x^2 + 8x - 10 = y$

x	y

Approximate Solutions:

(____, ____), (____, ____)

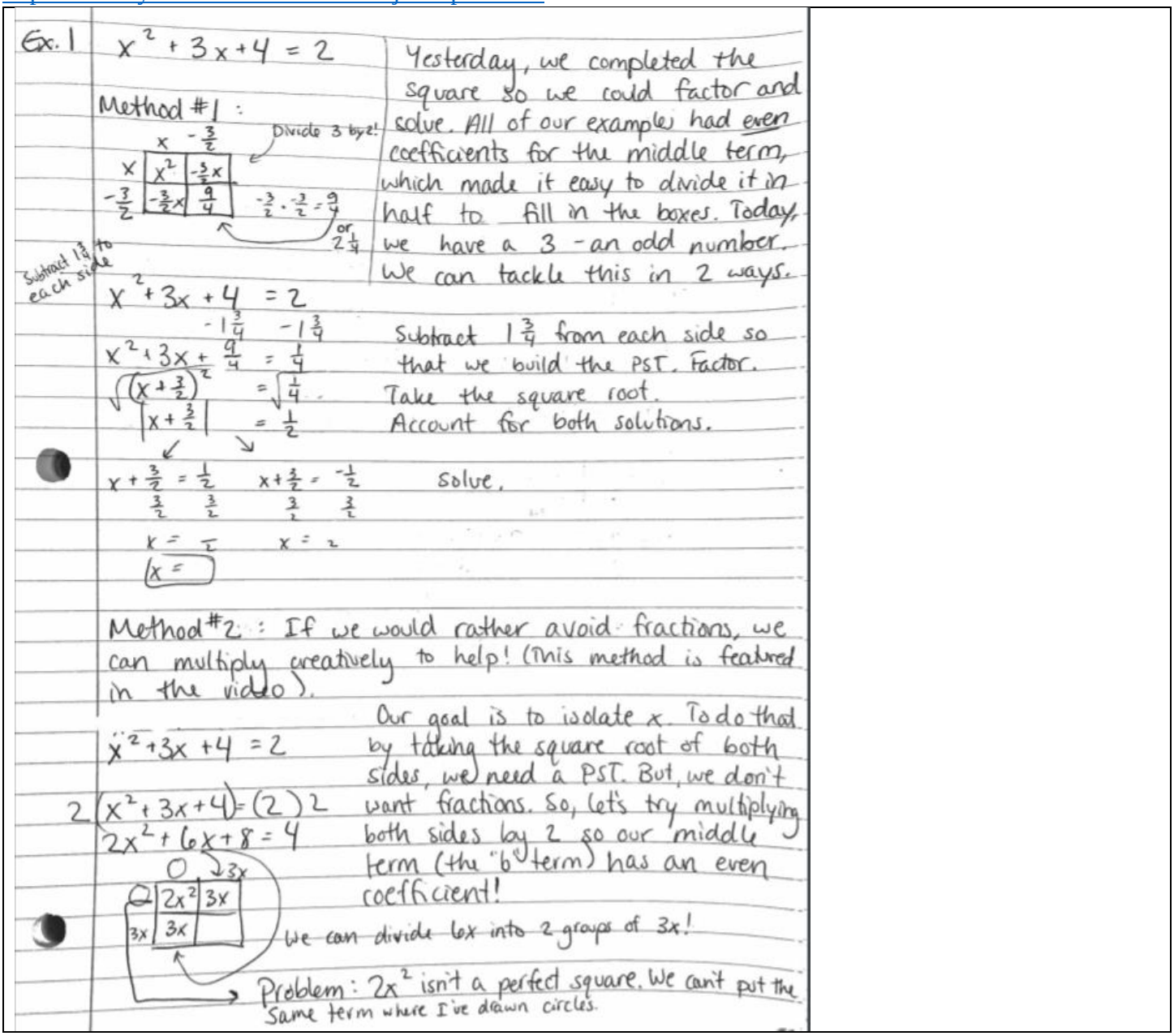


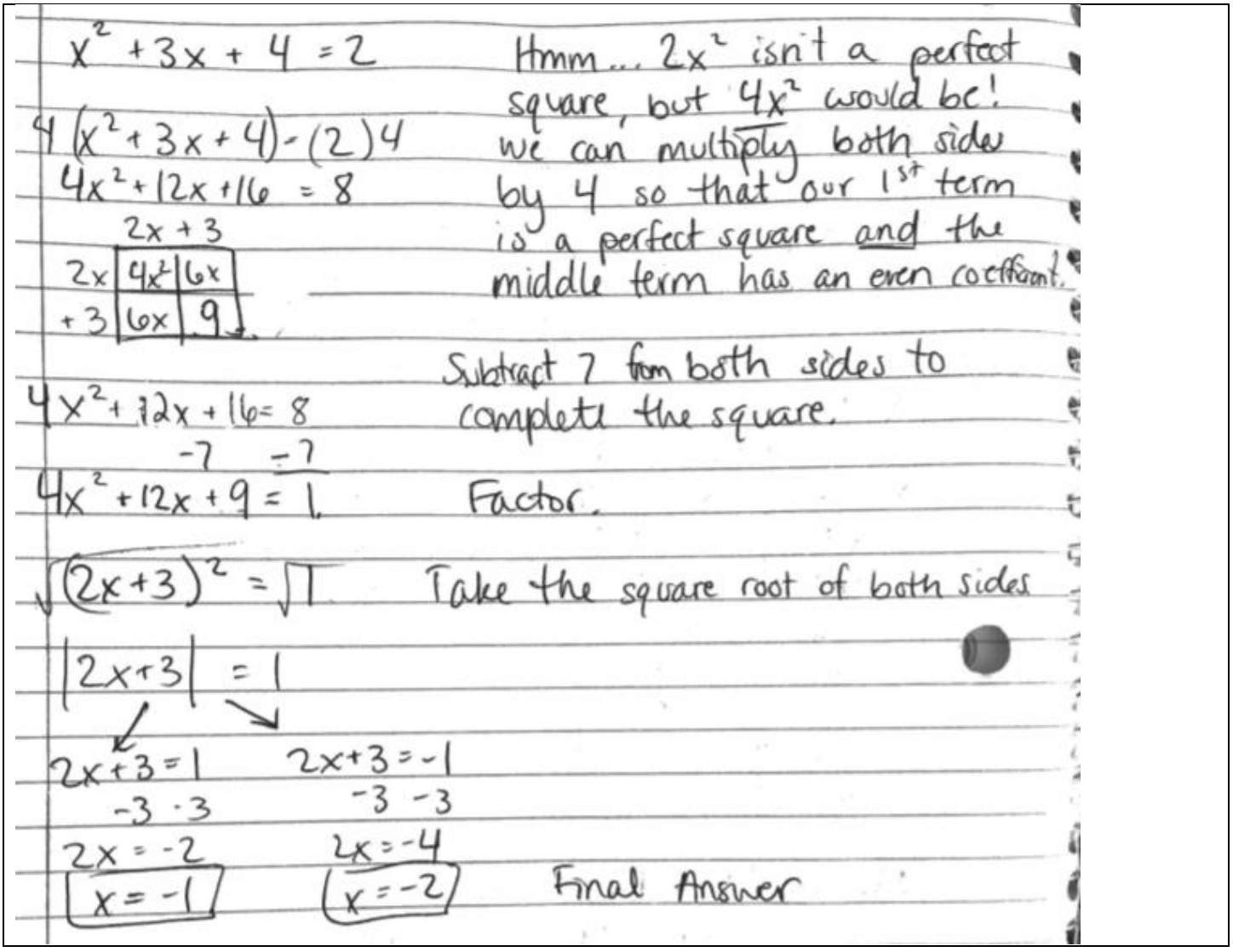
Approximate Solutions: _____	

We sometimes get exact solutions to quadratic equations. However, we often get irrational solutions, as in questions 1a) and 1b) above. When this happens, we can estimate to know *approximately* the values of the solutions.

NOTES: **Completing the Square - Part II**

Copy the examples (not the written notes) into your notes packet. The following video will help you: https://www.youtube.com/watch?v=bjH1HphOZ1Y





Remember, **it is very helpful to multiply both sides of an equation by 4** so that "b" is even.

Practice #1: Try one on your own! Solving by completing the square.

$x^2 - 3x - 18 = 0$

See the answer page at the back of the packet to check your work.

NOTES (Continued)

Remember, the general form for a quadratic equation is ax^2+bx+c. So far, we have completed the square for equations in which $a=1$. Let's look at an example in which $a \neq 1$.

Ex. 2 $3x^2-5x+6=4$

We see that "b" is odd, so we can multiply both sides by 4.

$4(3x^2-5x+6)=4(4)$

$12x^2-20x+24=16$

$12x^2$	$-10x$
$-10x$	

However, $12x^2$ is not a perfect square. Let's break it down to see its factors:

$12x^2$

$3 \cdot 4 \cdot x^2$

$2 \cdot 2$

$3(12x^2-20x+24)=(16)3$

$36x^2-60x+72=48$

$4x^2$ is a perfect square, but the 3 is preventing the term from being a perfect square. Note that the 3 is our "a" value - it comes from the initial equation. If we had 3^2, it would be a perf. sq. So, let's multiply both sides by 3 as well. $36x^2$ is a perfect square. Then, we can solve by completing the square.

$6x-5$

	$6x$	-5
$6x$	$36x^2$	$-30x$
-5	$-30x$	25

72, -47, 25

$36x^2-60x+72=48$

$-47 \quad -47$

$36x^2-60x+25=1$

$\sqrt{(6x-5)^2}=\sqrt{1}$

$|6x-5|=1$

$6x-5=1$ $\quad$ $6x-5=-1$

$6x-5=1$ → $+5 \; +5$ → $6x=6$ → $\boxed{x=1}$

$6x-5=-1$ → $+5 \; +5$ → $6x=4$ → $\boxed{x=\frac{2}{3}}$

Practice #2: Try one on your own! Solving by completing the square. HINT: You will get an irrational answer for this one (note, I will not always tell you when you will get an irrational answer!). Find **both** the **exact AND approximate values** for your solution. You may use a calculator to help you find the approx. value.

$5x^2 + 8x + 1 = 0$

See the answer page at the back of the packet to check your work.

Daily Practice: Solve each equation in your notes packet. Remember, multiply both sides by 4, a, or $4a$ as needed to complete the square. HINT for #3: Subtract $2m$ from both sides so all variable terms are on the left!

1) $3a^2 - 7a = 6$	2) $6n^2 - 10n = -4$	3) $3m^2 - 12 = 2m$

At this point, check in with yourself – do you have any questions about this content or these problems right now? If you do, write those questions here:

My questions at the end of Algebra 1 Lesson 2 (if any):

_____

_____

_____

_____

What action are you going to take to try to answer these questions? ☐ Ask my parent or family member. ☐ Have my parent help me email Ms. Steger or Ms. Brintnall. ☐ I may have to hold on to this question for a later time.	☐ ***I have completed all parts of today's lesson, checked my answers, recorded my questions (if any), and made a plan for answering my questions if needed. I am finished with Lesson 2 of Algebra 1 for Tuesday, March 31st!***

Wednesday, April 8

Algebra 1 Unit: Graphing Quadratics
Lesson 3: Completing the Square: Review and Quiz

Objective: Solve quadratic equations by completing the square.

NOTES TITLE:

Your Name

Lesson 3: Completing the Square Practice

Practice #1:
In your loose-leaf notes, complete p.563 #6-24 mult. 6 and #36 for practice on 12-1.

☐ ***I have completed these problems to the best of my ability.***

Now, check your answers with the answer sheet at the end of the packet. *If you got any wrong, try to find the source of your error and correct it*. This does not need to be done in a different color, unless that helps you.

Practice #2:
In your loose-leaf notes, complete p.566 #10, 11, and 17. Solve by completing the square.

☐ ***I have completed these problems to the best of my ability.***

Now, check #10 with the answer in the back of the packet and #11 and #17 with the back of your textbook. *If you got any wrong, try to find the source of your error and correct it*. This does not need to be done in a different color, unless that helps you.

Minor Assessment (Quiz)
Please read these boxes carefully before starting on the minor assessment.

- ☐ I understand that I am NOT allowed to use this packet during my quiz.
- ☐ I understand that I am NOT allowed to use my own loose-leaf packet during my quiz.
- ☐ I understand that while Ms. Steger and Ms. Brintnall estimate that the quiz will take 15 minutes, it is okay to spend the time I need.
- ☐ I understand that I am NOT allowed to ask a parent, family member, or friend for help during my quiz.
- ☐ I understand that I am NOT allowed to use the internet or any other resource to help with my quiz.

*****Once you have read through the above statements and checked each box, you may turn the page to begin your quiz. By signing the academic integrity statement on page 2 of this packet, you are saying that you completed the quiz on your own and without use of your notes.*****

Ch. 12 Quadratics Quiz #2

Solve. BOX your final answers.

1. $9r^2 = 121$	2. $(x-4)^2 = 8$
3. Find both ***exact*** solutions to $a^2 - 12a + 35 = 0$ by ***completing the square***. If your answer is irrational, write in simplest radical form. You do NOT need to approximate. BOX your solutions.	4. Find both ***exact*** solutions to $2x^2 + 3x = 9$ by ***completing the square***. If your answer is irrational, write in simplest radical form. You do NOT need to approximate. BOX your solutions.

Once you've finished the quiz, you are done with Algebra I for Wednesday, April 8!

Thursday, April 8

Algebra 1 Unit: Graphing Quadratic Equations
Lesson 4: 12-3 The Quadratic Formula

Objective: Solve quadratic equations by using the quadratic formula. (12-3)

NOTES TITLE:

Your Name

Lesson 4: The Quadratic Formula

Today, you will be reading and taking notes on how to derive the **quadratic formula**! This will look confusing at times. However, follow the directions given for notetaking, and read the notes through a second time if need be. Today, your goal is to see how we have a quadratic formula. Next week, you will do more practice so that you can use it effectively.

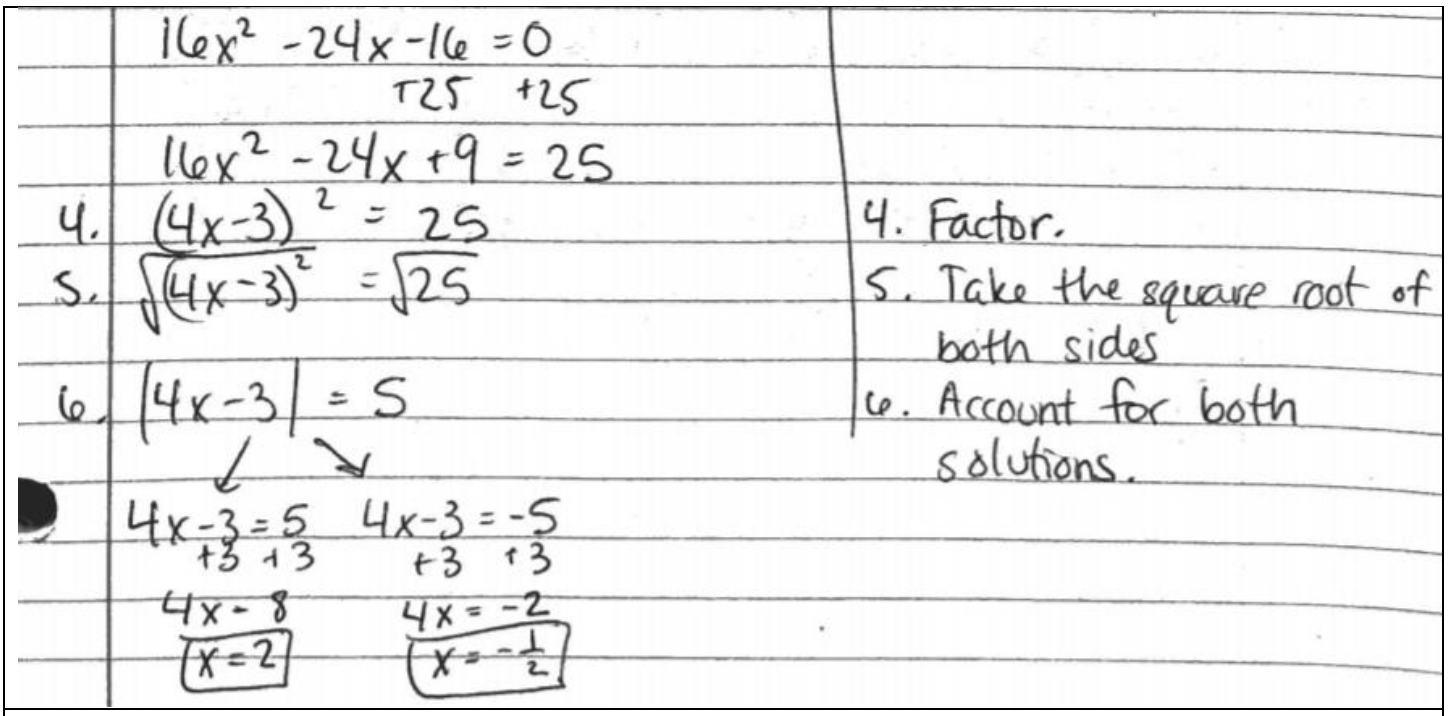
Let's look at a particular quadratic equation:

$$2x^2 - 3x - 2 = 0$$

What are a, b, & c?
a is 2, b is -3, and c is -2. Over the past few days, you've practiced completing the square. We will walk through this problem together. I will write very specific notes in two columns. Copy both the procedure and explanation columns into your notebook. Remember, the goal is to isolate x.

Procedure	Explanation
1. $2x^2 - 3x - 2 = 0$	1. The original equation is set equal to zero.
2. $8(2x^2 - 3x - 2) = (0)8$	2. Multiply both sides by 4a. (In this case, 4a = 4·2 = 8)
3. $16x^2 - 24x - 16 = 0$	3. Factor to complete the square/build a PST.

	$4x$	-3
$4x$	$16x^2$	$-12x$
-3	$-12x$	9

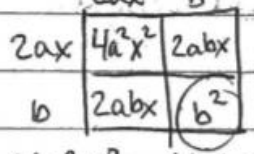


(Pause notes…simply read the next part!)

Mathematicians strive to take processes and patterns in specific situations and generalize them so they can describe these processes in a universal way. So, let's take the standard form for a quadratic equation, follow the same process we just did, and see what results. Before we begin, remember our goal? Isolate x!

NOTE: For this one, copy the procedure, but you do not need to copy the explanation.

GreatHearts®

	Procedure	Explanation
1.	$ax^2+bx+c=0$	1. The standard form of the quadratic equation is set equal to 0.
2.	$4a(ax^2+bx+c)=0(4a)$ $4a^2x^2+4abx+4ac=0$	2. Is "b" even or odd? Is "a" a perfect square? We don't know, so we must multiply by 4a.
3.		3. Factor to complete the square, build a PST.
4.	$4a^2x^2+4abx+4ac=0$ $+b^2 \quad +b^2$ $(4a^2x^2+4abx+b^2)+4ac=b^2$	4. Add b^2 to both sides & group the terms so they form a PST we can factor.
5.	$(2ax+b)^2+4ac=b^2$	5. Factor.
6.	$-4ac \quad -4ac$ $(2ax+b)^2=b^2-4ac$	6. Remember, our goal is to isolate x. Follow SADMEP & subtract 4ac from both sides.
7.	$\sqrt{(2ax+b)^2}=\sqrt{b^2-4ac}$ $\lvert 2ax+b\rvert=\sqrt{b^2-4ac}$	7. Our equation may look strange, but we follow the same next step - take the square root of both sides.
8.	$2ax+b=\sqrt{b^2-4ac} \quad 2ax+b=-\sqrt{b^2-4ac}$	8. Account for both solutions.

9. $2ax + b = \sqrt{b^2-4ac}$
$-b \quad -b$
$\frac{2ax}{2a} = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$
$x = \frac{-b + \sqrt{b^2-4ac}}{2a}$

$2ax + b = -\sqrt{b^2-4ac}$
$-b \quad -b$
$\frac{2ax}{2a} = \frac{-b - \sqrt{b^2-4ac}}{2a}$
$x = \frac{-b - \sqrt{b^2-4ac}}{2a}$

We can combine our answers to write it as

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

9. Solve.

We arrived at the quadratic formula! If you would like a video explanation as well, click here: https://www.youtube.com/watch?v=eDwi96DCdTc

THIS is the quadratic formula! It is a universal equation that will always give us the roots to a quadratic equation (assuming that the equation is set equal to zero)!

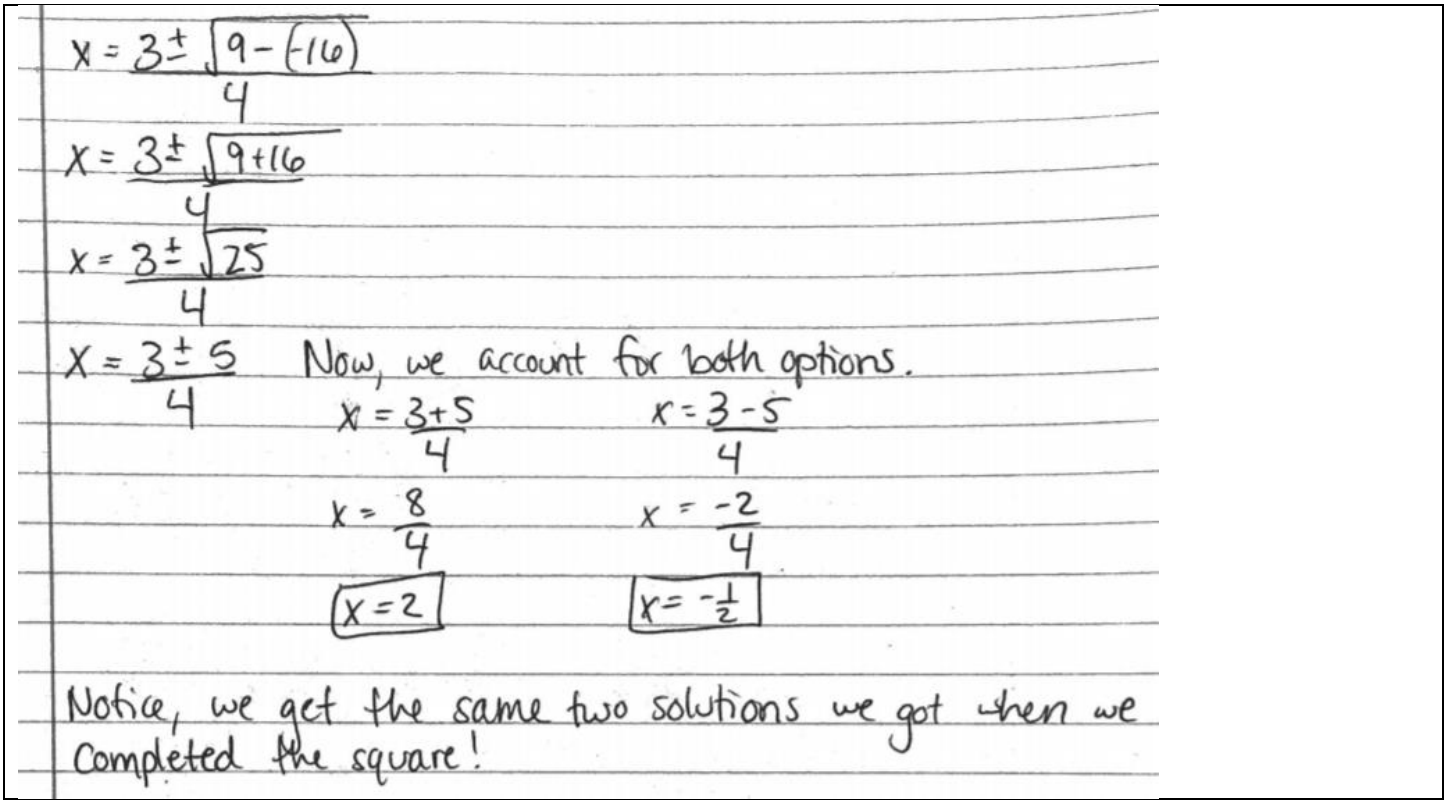
Let's try it out with our 1st example from today. Copy this into your notes:

$2x^2 - 3x - 2 = 0$

$a = 2$
$b = -3$
$c = -2$
} values to plug in

$$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

$$x = \frac{-(-3) \pm \sqrt{(-3)^2 - 4(2)(-2)}}{2(2)}$$ simplify!



Write the quadratic formula in this box:

Now, solve the following quadratic equation using the quadratic formula. Check the answer on the next page when finished.

$x^2 - 3x - 1 = 0$

a = _____

b = _____

c = _____

Solutions:

Answer: $\frac{3\pm\sqrt{13}}{2}$ (Approximately 3.3 and -0.3)

At this point, check in with yourself – do you have any questions about this content or these problems right now? If you do, write those questions here:

My questions at the end of Algebra 1 Lesson 4 (if any):

_____

_____

_____

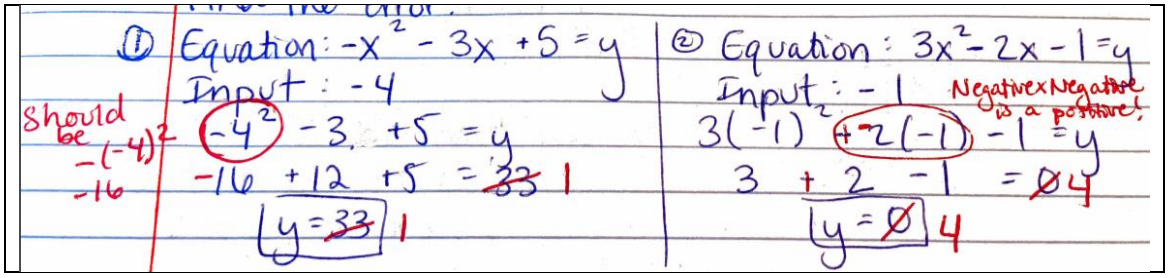
_____

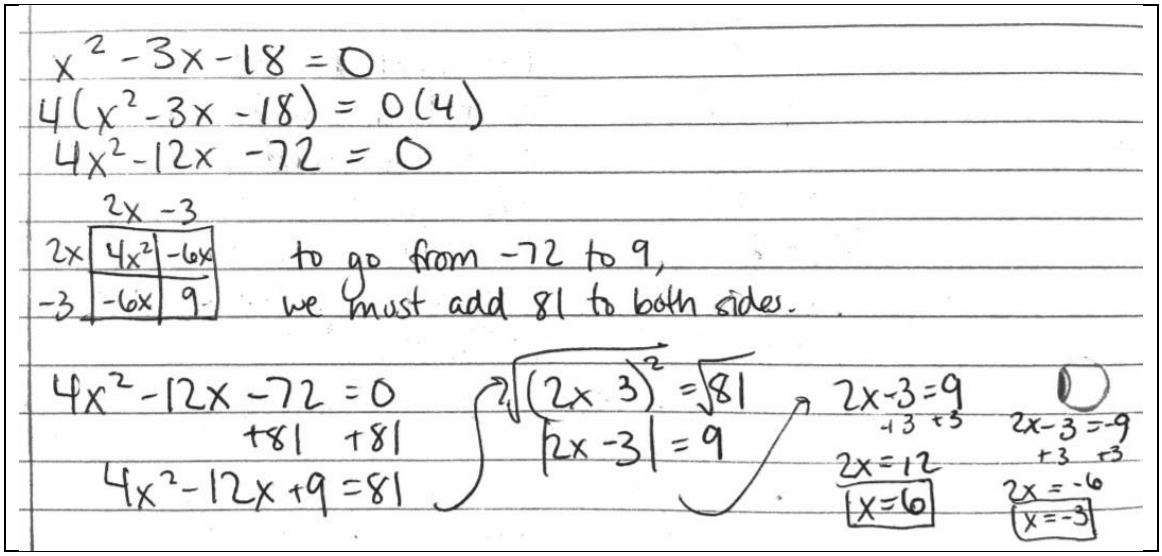
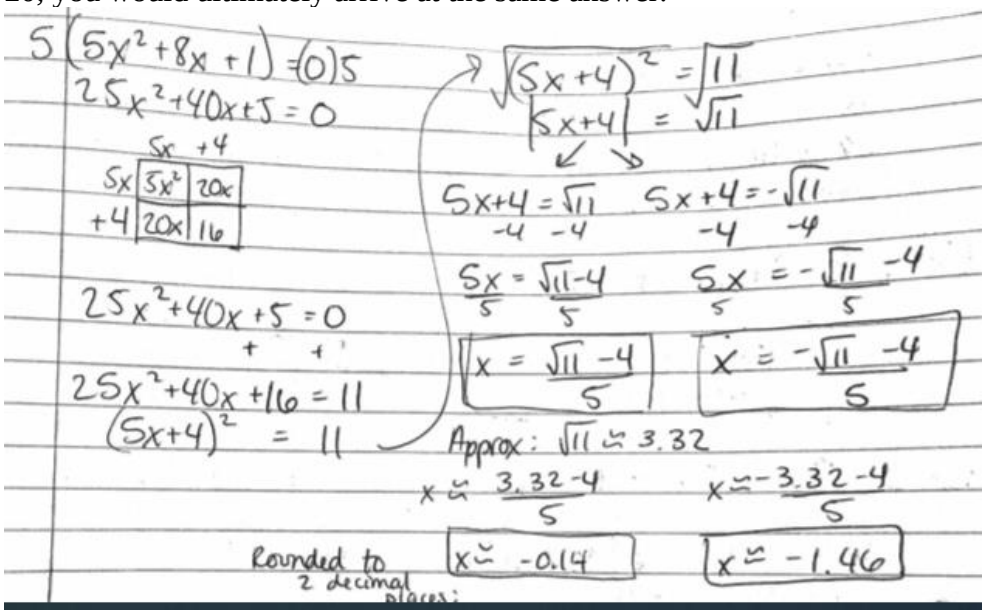
What action are you going to take to try to answer these questions? ☐ Ask my parent or family member. ☐ Have my parent help me email Ms. Steger or Ms. Brintnall. ☐ I may have to hold on to this question for a later time. (At this point in the week, it is probably not a good idea to hold onto a question, unless it is more of an extension question that you are just curious about).	☐ ***I have completed all parts of today's lesson, checked my answers, recorded my questions (if any), and made a plan for answering my questions if needed. I am finished with Lesson 5 of Algebra 1 for Friday, April 3rd!***

Great work this week! Enjoy a restful four days with your family! 😊 😊 😊

~ Ms. Steger and Ms. Brintnall

Answer Key for All Lessons

Lesson 1 – 12-2 Completing the Square	**Bellwork:** Solution – a value that makes a statement true Synonyms for "x-intercept" – root, zero, solution **Number of Roots:** a) 2 (the parabola crosses the x-axis at two points) b) 1 (the parabola touches the x-axis at one point) c) 0 (the parabola will never touch the x-axis) **Activity #1:** 1a) $x = \pm 3$ 1b) (-3, 0), (3,0) 2a) $\{2, 8\}$ 2b) (2,0), (8,0) 3) In part a, each equation was set equal to zero. By using PEMDAS, we found the two solutions to x. In part b, the equation was set equal to y. We found ordered pairs, and then found the solutions by looking at the x-intercepts. 4) We arrived at the same values for the solutions! The solutions for 1a) and 1b) were both ± 3, and the solutions for 2a) and 2b) were both 2 and 8. 5) c **Activity #2:** 1) $x = -1, x = -13$ 2) $c = 1, c = -\frac{3}{5}$ 3) $x = 1 \pm 2\sqrt{3}$ 4) Perfect Square Trinomial (PST) **Daily Practice:** 1) Exact: $\{2 - \sqrt{21}, 2 + \sqrt{21}\}$; Approximate: $\{6.6, -2.6\}$ 2) {-25, 7} 3) {1, 19}
Lesson 2 – 12-2 Completing the Square (Continued)	**Find the error:**  ① Equation: $-x^2 - 3x + 5 = y$ Input: -4 Should be $-(-4)^2$ -16 $-4^2 - 3 + 5 = y$ $-16 + 12 + 5 = \cancel{33}\ 1$ $y = \cancel{33}\ 1$ ② Equation: $3x^2 - 2x - 1 = y$ Input: -1 Negative x Negative is a positive! $3(-1)^2 + 2(-1) - 1 = y$ $3 + 2 - 1 = \cancel{0}\ 4$ $y = \cancel{0}\ 4$ **Activity #1:** 1a) Exact: $\{\sqrt{26} - 4, -\sqrt{26} - 4\}$; Approximate: {1.1, -9.1} 1b) Approximate: {1.1, -9.1} (as long as your appriximation is close, you're correct!)

	Practice #1  $x^2-3x-18=0$ $4(x^2-3x-18)=0(4)$ $4x^2-12x-72=0$ $2x-3$ $2x$ | $4x^2$ | $-6x$ -3 | $-6x$ | 9 to go from -72 to 9, we must add 81 to both sides. $4x^2-12x-72=0$ $+81\ +81$ $4x^2-12x+9=81$ $\sqrt{(2x-3)^2}=\sqrt{81}$ $\|2x-3\|=9$ $2x-3=9$ $+3\ +3$ $2x=12$ $x=6$ $2x-3=-9$ $+3\ +3$ $2x=-6$ $x=-3$ **Practice #2** NOTE: I multiplied both sides by *a*, which equals 5. If you multiplied both sides by 4*a*, or 20, you would ultimately arrive at the same answer.  $5(5x^2+8x+1)=(0)5$ $25x^2+40x+5=0$ $5x$ $+4$ $5x$ | $5x^2$ | $20x$ $+4$ | $20x$ | 16 $25x^2+40x+5=0$ $+\quad +$ $25x^2+40x+16=11$ $(5x+4)^2=11$ $\sqrt{(5x+4)^2}=\sqrt{11}$ $\|5x+4\|=\sqrt{11}$ $5x+4=\sqrt{11}$ $-4\ -4$ $5x=\sqrt{11}-4$ $\frac{5x}{5}=\frac{\sqrt{11}-4}{5}$ $x=\frac{\sqrt{11}-4}{5}$ $5x+4=-\sqrt{11}$ $-4\ -4$ $5x=-\sqrt{11}-4$ $\frac{5x}{5}=\frac{-\sqrt{11}-4}{5}$ $x=\frac{-\sqrt{11}-4}{5}$ Approx: $\sqrt{11}\approx 3.32$ $x\approx\frac{3.32-4}{5}$ $x\approx -0.14$ $x\approx\frac{-3.32-4}{5}$ $x\approx -1.46$ Rounded to 2 decimal places: **Daily Practice:** 1) $\left\{3,-\frac{2}{3}\right\}$ 2) $\left\{1,\frac{2}{3}\right\}$ 3) $Exact$: $\left\{\frac{1\pm\sqrt{37}}{3}\right\}$; $Approx.$: $\{-1.69, 2.36\}$
Lesson 3 – Solving Quadratics Practice	**Practice #1:** p.563 #6-24 mult. 6 & #36 6) $\{\pm\sqrt{26}\}$ 12) $\{\pm\sqrt{6}\}$ 18) $\{-2\pm 2\sqrt{3}\}$ 24) $\{-5\pm\sqrt{7}\}$ 36) $\{\frac{-10\pm\sqrt{3}}{5}\}$ **Practice #2:** p.566 #10, 11, 17 10) $Exact$: $\left\{\frac{\sqrt{13}-1}{2},\frac{-\sqrt{13}-1}{2}\right\}$; $Approx.$: $\{-2.3, 1.3\}$ 11 & 17 are in the back of your text.