Schedule & Module Agenda

Instructor: Matt Yubas

Course Title: Algebra 1 Quadratic Functions

Grade Level: 8th Grade PreAP and 9th Grade

Outline and Schedule

Due Dates are due at 9 pm Central Standard Time.

Textbook: Online Pearson Texas Algebra I, 2016, 2nd Edition, Dr. Randall I. Charles

Module	Topics/Readings	Learning Activities	Assignments/Quizzes	Due Dates
0	**Introduction to the course** **Readings** • Review Algebra 1 course webpage • Read the course Syllabus • Read the Schedule Due Dates and Agenda	**Orientation** • Instructor Introduction • If new to Moodle, review the Moodle Quick Guide	**Group Activity** • Post Student Introduction **Task** • Complete Syllabus Quiz (no grade)	Jan 9 Jan 12
1	**Introduction to Quadratic Functions** **Readings** • Textbook pages x to y • Study Topic Guide: Introduction to Quadratic Functions • Review Worked Problem Examples for Introduction	**Video Tutorials** • Characteristics of quadratic functions • Graphing quadratic functions	**Group Activities** • Wiki Posting • Problem Solving Discussion **Tasks** • Problems Assignment 1 • Practice Self-Quiz 1 • Quiz 1	Jan 16 Jan 19

2	**Model a Quadratic Function** **Readings** • Textbook pages x to y • Study Topic Guide: Model a Quadratic Function • Review Worked Problem Examples for Quadratic Models	**Video Tutorials** • Models of quadratic equations to solve problems • Parameter changes in "a" • Parameter changes in "c" • Predict and determine quadratic parameter changes	**Group Activities** • Wiki Posting • Problem Solving Discussion **Tasks** • Problems Assignment 2 • Practice Self-Quiz 2 • Quiz 2	Jan 23 Jan 26
3	**Solving Quadratic Equations Part 1** **Readings** • Textbook pages x to y • Study Topic Guide: Solving Quadratic Equations Part 1 • Review Worked Problem Examples for Quadratic Equation Solving Part 1	**Video Tutorials** • Find the greatest common factor • Factors of quadratic functions • Find factors using the Box Method	**Group Activities** • Wiki Posting • Problem Solving Discussion **Tasks** • Problems Assignment 3 • Practice Self-Quiz 3 • Quiz 3	Jan 31 Feb 2
4	**Solving Quadratic Equations Part 2** **Readings** • Textbook pages x to y • Study Topic Guide: Solving Quadratic Equations Part 2 • Review Worked Problem Examples for Quadratic Equation Solving Part 2	**Video Tutorials** • Sums, products, & factoring • Using the Quadratic Formula • Completing the square	**Group Activities** • Wiki Posting • Problem Solving Discussion **Task** • Problems Assignment 4 **Project** • Project Quadratics	Feb 6 Feb 9 Feb 16

Module Agendas

NOTE: Underlined words are Links to documents and websites.

MODULE 1 AGENDA	
A. Objectives	This module is an introduction to quadratic function characteristics. Characteristics include knowing about the Standard Form $f(x) = ax^2 + bx + c$, the (x, y) point of the Vertex, the Axis of Symmetry, x-intercepts and y-intercept, and minimums and maximums. You will also learn about graphing quadratic functions on the coordinate plane. **Learning Objectives** • Understand characteristics of quadratic functions. • Graph quadratic functions on the coordinate plane from an equation and from table data.
B. Study Materials	**1. Readings** Read the following. Use a notebook or word-processor to take notes. As you read, write notes and summarize in your own words. ○ Read Textbook pages x to y ○ Download and read - Study Topic Guide Introduction to Quadratic Functions ○ Download and review - Worked Examples Introduction **2. Video Tutorials** Watch the video tutorials from Khan Academy. Follow along by writing the steps to solve the problems. Each link takes you to an external website. ○ Characteristics of quadratic functions ○ Graphing quadratic functions
C. Learning Activities	Students will read from the textbook and study guide about characteristics of quadratic functions and graphing quadratic functions using equations and table data. Students will watch video tutorials, review worked examples, complete the independent assignment, post a definition to the wiki glossary, post a worked problem to the discussion forum, and complete the quiz.
D. Discussions	**3. Solve a Sample Problem** ○ You will work in a team to solve a problem. ○ Download the Rubric for grading. ○ Go to the Moodle Discussion Forum for this Module. ○ Teams will be given a sample problem shown in the Discussion Forum.

- Teams will write the steps to arrive at a solution of a sample problem.
- Post the problem, steps to solve, and solution.
- Also, post in words, how the team solved the problem. This can be two to three sentences.
- All students must contribute at least one posting to this discussion.

E. Assignments

4. Wiki Glossary Posting

- It's important you understand the vocabulary for Algebra. Each week you will build a list of definitions for this course.
- Download the Rubric for grading.
- Teams are given one or more algebraic words to define.
- Download the definitions list here.
- Teams will write definitions of assigned algebraic words.
- Use the textbook, instructor handouts, or your choice of a mathematics website.
- Write your definition using a word-processor. Use an online word-processor such as Google Docs. One person in the team creates the document and shares with others to collaborate together.
- Work as a team. Decide who will research, who will write, and who will edit, spell check, and grammar check.
- All students will contribute to the team to write the definition, edit, spell check, and grammar check.
- Then go to the online class Wiki.
- Post the assigned word and definition to the class wiki glossary.
- Then all students will review postings from the other teams.

5. Problems Assignment 1

- There is a 10 problem worksheet to complete.
- Download the Rubric for grading.
- This is an individual assignment.
- Complete before the due date and time.
- Download the problems worksheet.
- Complete the worksheet in the same manner as the worked examples.
- Print and handwrite, or use a word-processor to complete.
- Determine the steps and solutions to the practice problems.
- If handwritten: Use a camera, phone camera, scanner, or webcam, to capture images of the worksheet.
- Name your worksheet as **Firstname-Lastname-Assignment1.docx** or .pdf or .jpg for example Chris-Jones-Assignment1.pdf
- Go to the Moodle Assignments section.
- Upload the completed worksheet file to Assignment1.

6. Practice Self-Quiz 1

- Go online to Self-Quiz1 and solve the problems.
- This will check your understanding.

	○ You may work with others. ○ There is no grade. ○ If you are not sure of a solution, click on Hints. If you miss a problem, look at the solution explanation.
F. Quizzes	**7. Quiz 1** ○ This is an individual assignment. ○ Complete before the due date and time. ○ Go to the Moodle Assessment section and select Quiz 1. ○ The quiz covers this module. ○ Once you begin, you must complete. ○ You have 60 minutes to complete. ○ Questions are fill-in and multiple choice. ○ You may not receive help from other people.

MODULE 2 AGENDA	
A. Objectives	This module is an introduction to quadratic function models and the effects of changes to quadratic functions. Changes to the "a" parameter make the parabola wider or narrower. Changes to the "c" parameter shift the parabola up and down which also changes the y-intercept. **Learning Objectives** • Analyze Models of quadratic equations to solve problems • Determine Parameter changes in "a" • Determine Parameter changes in "c"
B. Study Materials	**1. Readings** Read the following. Use a notebook or word-processor to take notes. As you read, write notes and summarize in your own words. ○ Read Textbook pages x to y ○ Download and read - Study Topic Guide Model a Quadratic Function ○ Download and review - Worked Problem Examples Model a Quadratic Function **2. Video Tutorials** Watch the video tutorials from Khan Academy. Follow along by writing the steps to solve the problems. Each link takes you to an external website. ○ Models of quadratic equations to solve problems ○ Parameter changes in "a" ○ Parameter changes in "c"

C. Learning Activities	Students will read from the textbook and study guide about quadratic function models and the effects of changes to quadratic functions. Students will watch video tutorials, review worked examples, complete the independent assignment, post a definition to the wiki glossary, post a worked problem to the discussion forum, and complete the quiz.
D. Discussions	**3. Solve a Sample Problem** ○ You will work in a team to solve a problem. ○ Download the Rubric for grading. ○ Go to the Moodle Discussion Forum for this Module. ○ Teams will be given a sample problem shown in the Discussion Forum. ○ Teams will write the steps to arrive at a solution of a sample problem. ○ Post the problem, steps to solve, and solution. ○ Also, post in words, how the team solved the problem. This can be two to three sentences. ○ All students must contribute at least one posting to this discussion.
E. Assignments	**4. Wiki Glossary Posting** ○ It's important you understand the vocabulary for Algebra. Each week you will build a list of definitions for this course. ○ Download the Rubric for grading. ○ Teams are given one or more algebraic words to define. ○ Download the definitions list here. ○ Teams will write definitions of assigned algebraic words. ○ Use the textbook, instructor handouts, or your choice of a mathematics website. ○ Write your definition using a word-processor. Use an online word-processor such as Google Docs. One person in the team creates the document and shares with others to collaborate together. ○ Work as a team. Decide who will research, who will write, and who will edit, spell check, and grammar check. ○ All students will contribute to the team to write the definition, edit, spell check, and grammar check. ○ Then go to the online class Wiki. ○ Post the assigned word and definition to the class wiki glossary. ○ Then all students will review postings from the other teams. **5. Problems Assignment 2** ○ There is a 10 problem worksheet to complete. ○ Download the Rubric for grading. ○ This is an individual assignment. ○ Complete before the due date and time. ○ Download the problems worksheet.

	○ Complete the worksheet in the same manner as the worked examples. ○ Print and handwrite, or use a word-processor to complete. ○ Determine the steps and solutions to the practice problems. ○ If handwritten: Use a camera, phone camera, scanner, or webcam, to capture images of the worksheet. ○ Name your worksheet as **Firstname-Lastname-Assignment2.docx** or .pdf or .jpg for example Chris-Jones-Assignment2.pdf ○ Go to the Moodle Assignments section. ○ Upload the completed worksheet file to Assignment2. **6. Practice Self-Quiz 2** ○ Go online to Self-Quiz2 and solve the problems. ○ This will check your understanding. ○ You may work with others. ○ There is no grade. ○ If you are not sure of a solution, click on Hints. If you miss a problem, look at the solution explanation.
F. Quizzes	**7. Quiz 2** ○ This is an individual assignment. ○ Complete before the due date and time. ○ Go to the Moodle Assessment section and select Quiz 2. ○ The quiz covers this module. ○ Once you begin, you must complete. ○ You have 60 minutes to complete. ○ Questions are fill-in and multiple choice. ○ You may not receive help from other people.

MODULE 3 AGENDA	
A. Objectives	This module is an introduction to methods of solving quadratic functions using the greatest common factor, find the factors of quadratic equations, and find the factors using the box method. Quadratic functions have solutions where the curve crosses the x-axis. Therefore, the solutions are the x-intercepts. Quadratic functions have either two solutions (touches the x-axis twice), one solution (at the origin), or no solution when the parabola does not touch the x-axis. **Learning Objectives** • Determine the greatest common factor • Determine the factors of quadratic equations • Determine the factors using the Box Method

B. Study Materials	**1. Readings** Read the following. Use a notebook or word-processor to take notes. As you read, write notes and summarize in your own words. ○ Read Textbook pages x to y ○ Download and read - Study Topic Guide Solving Quadratic Equations Part 1 ○ Download and review - Worked Examples Solving Quadratic Equations Part 1 **2. Video Tutorials** Watch the video tutorials from Khan Academy. Follow along by writing the steps to solve the problems. Each link takes you to an external website. ○ Find the greatest common factor ○ Factors of quadratic functions ○ Find factors using the Box Method
C. Learning Activities	Students will read from the textbook and study guide about methods of solving quadratic function using the greatest common factor, find the factors of quadratic equations, and find the factors using the box method. Students will watch video tutorials, review worked examples, complete the independent assignment, post a definition to the wiki glossary, post a worked problem to the discussion forum, and complete the quiz.
D. Discussions	**3. Solve a Sample Problem** ○ You will work in a team to solve a problem. ○ Download the Rubric for grading. ○ Go to the Moodle Discussion Forum for this Module. ○ Teams will be given a sample problem shown in the Discussion Forum. ○ Teams will write the steps to arrive at a solution of a sample problem. ○ Post the problem, steps to solve, and solution. ○ Also, post in words, how the team solved the problem. This can be two to three sentences. ○ All students must contribute at least one posting to this discussion.
E. Assignments	**4. Wiki Glossary Posting** ○ It's important you understand the vocabulary for Algebra. Each week you will build a list of definitions for this course. ○ Download the Rubric for grading. ○ Teams are given one or more algebraic words to define. ○ Download the definitions list here. ○ Teams will write definitions of assigned algebraic words. ○ Use the textbook, instructor handouts, or your choice of a mathematics website.

- Write your definition using a word-processor. Use an online word-processor such as Google Docs. One person in the team creates the document and shares with others to collaborate together.
- Work as a team. Decide who will research, who will write, and who will edit, spell check, and grammar check.
- All students will contribute to the team to write the definition, edit, spell check, and grammar check.
- Then go to the online class Wiki.
- Post the assigned word and definition to the class wiki glossary.
- Then all students will review postings from the other teams.

5. Problems Assignment 3

- There is a 10 problem worksheet to complete.
- Download the Rubric for grading.
- This is an individual assignment.
- Complete before the due date and time.
- Download the problems worksheet.
- Complete the worksheet in the same manner as the worked examples.
- Print and handwrite, or use a word-processor to complete.
- Determine the steps and solutions to the practice problems.
- If handwritten: Use a camera, phone camera, scanner, or webcam, to capture images of the worksheet.
- Name your worksheet as **Firstname-Lastname-Assignment3.docx** or .pdf or .jpg for example Chris-Jones-Assignment3.pdf
- Go to the Moodle Assignments section.
- Upload the completed worksheet file to Assignment3.

6. Practice Self-Quiz 3

- Go online to Self-Quiz3 and solve the problems.
- This will check your understanding.
- You may work with others.
- There is no grade.
- If you are not sure of a solution, click on Hints. If you miss a problem, look at the solution explanation.

F. Quizzes

7. Quiz 3

- This is an individual assignment.
- Complete before the due date and time.
- Go to the Moodle Assessment section and select Quiz 3.
- The quiz covers this module.
- Once you begin, you must complete.
- You have 60 minutes to complete.
- Questions are fill-in and multiple choice.
- You may not receive help from other people.

MODULE 4 AGENDA	
A. Objectives	This module is an introduction to methods of solving quadratic functions using quadratics sums, products, factoring, using the quadratic formula, and completing the square. The quadratic formula will solve any quadratic function. The quadratic formula uses the "a" "b" and "c" terms from the equation $f(x) = ax^2 + bx + c$. Completing the square is another method that will solve any quadratic function. **Learning Objectives** • Determine quadratics sums, products, & factoring • Solve quadratics using the quadratic formula • Solve quadratics completing the square
B. Study Materials	**1. Readings** Read the following. Use a notebook or word-processor to take notes. As you read, write notes and summarize in your own words. ○ Read Textbook pages x to y ○ Download and read - Study Topic Guide Solving Quadratic Equations Part 2 ○ Download and review - Worked Examples Solving Quadratic Equations Part 2 **2. Video Tutorials** Watch the video tutorials from Khan Academy. Follow along by writing the steps to solve the problems. Each link takes you to an external website. ○ Sums, products, & factoring ○ Using the Quadratic Formula ○ Completing the square
C. Learning Activities	Students will read from the textbook and study guide about methods of solving quadratic functions using quadratics sums, products, factoring, using the Quadratic Formula, and completing the square. Students will watch video tutorials, review worked examples, complete the independent assignment, post a definition to the wiki glossary, post a worked problem to the discussion forum, and complete the quiz.
D. Discussions	**3. Solve a Sample Problem** ○ You will work in a team to solve a problem. ○ Download the Rubric for grading. ○ Go to the Moodle Discussion Forum for this Module. ○ Teams will be given a sample problem shown in the Discussion Forum.

	○ Teams will write the steps to arrive at a solution of a sample problem. ○ Post the problem, steps to solve, and solution. ○ Also, post in words, how the team solved the problem. This can be two to three sentences. ○ All students must contribute at least one posting to this discussion.
E. Assignments	**4. Wiki Glossary Posting** ○ It's important you understand the vocabulary for Algebra. Each week you will build a list of definitions for this course. ○ Download the Rubric for grading. ○ Teams are given one or more algebraic words to define. ○ Download the definitions list here. ○ Teams will write definitions of assigned algebraic words. ○ Use the textbook, instructor handouts, or your choice of a mathematics website. ○ Write your definition using a word-processor. Use an online word-processor such as Google Docs. One person in the team creates the document and shares with others to collaborate together. ○ Work as a team. Decide who will research, who will write, and who will edit, spell check, and grammar check. ○ All students will contribute to the team to write the definition, edit, spell check, and grammar check. ○ Then go to the online class Wiki. ○ Post the assigned word and definition to the class wiki glossary. ○ Then all students will review postings from the other teams. **5. Problems Assignment 4** ○ There is a 10 problem worksheet to complete. ○ Download the Rubric for grading. ○ This is an individual assignment. ○ Complete before the due date and time. ○ Download the problems worksheet. ○ Complete the worksheet in the same manner as the worked examples. ○ Print and handwrite, or use a word-processor to complete. ○ Determine the steps and solutions to the practice problems. ○ If handwritten: Use a camera, phone camera, scanner, or webcam, to capture images of the worksheet. ○ Name your worksheet as **Firstname-Lastname-Assignment4.docx** or .pdf or .jpg for example Chris-Jones-Assignment4.pdf ○ Go to the Moodle Assignments section. ○ Upload the completed worksheet file to Assignment4.
F. Project	**6. Project Quadratic** ○ Download the Project Details. ○ This is a two person team project.

- Download the Team list.
- Ahead of time, you may decide to make this an individual assignment. Contact me one week before the due date to make this an individual assignment.
- Name your project document as **Firstname-Lastname-Project.docx** for example Chris-Jones-Project.docx
- Go to the Moodle Assignments section.
- Upload the completed file to Project.

End of Schedule