

# Math 11 Pre-Calculus LG 6/7

## QUADRATIC EQUATIONS

### INTRODUCTION:

Many pieces of useful information can be found by solving a quadratic equation under various circumstances. The methods you learn in this guide can be applied to any function which has the highest variable exponent of 2. This information will prove to be extremely useful to you in your future endeavours in mathematics.

### LEARNING GUIDE EXPECTATIONS:

On the completion of this learning guide you will be able to:


- 1) solve quadratic equations by graphing.
- 2) factor quadratic equations in order to find the solutions.
- 3) solve quadratic equations by completing the square.
- 4) use the quadratic formula to determine the solutions.

### EVALUATION:

You are ready to progress to the next learning guide when you can demonstrate your understanding of the above expectations. Please refer to your Mathematics 11 Pre-Calc Marks Record Sheet to determine the assessment.

### RESOURCES NEEDED:

 Math 11 Pre-Calc Text

 Math 11 Pre-Calc Learning Guides.

### LEARNING ACTIVITIES:

#### **Expectation #1: Solve Quadratic Equations using:**

- 1) **graphing**
- 2) **factoring**
- 3) **completing the square**
- 4) **quadratic formula**



1. [Watch and take notes on instructional video on Solving Quadratics by Graphing.](#)



2. In the Math 11 text, read and take notes on pages 206-214.



3. [Watch and take notes on instructional video on Solving Quadratics by Factoring.](#)

4. In the Math 11 text, read and take notes on pages 218-229. Work through Example 3 on pages 223-225. Now complete the **Your Turn** section on page 225.



5. [Watch and take notes on instructional video on Solving Quadratics by Completing the Square.](#)

6. In the Math 11 text, read and take notes on pages 234-240. Work through Example 2 on page 237. Now complete the **Your Turn** section on page 237.



7. [Watch and take notes on instructional video on Solving Quadratics by the Quadratic Formula.](#)

8. In the Math 11 text, read and take notes on pages 244-253. Work through Example 1 on pages 246-247 and Example 2 on pages 248-249. Now complete the **Your Turn** section on page 247 and 249.



9. Read Key Ideas on pages 214, 229, 240, and 253. In your math journal, make a three column chart that you will use to show the advantages, disadvantages, and why you like (or dislike) the four methods of solving quadratic equations.



10. Complete the **Check Your Understanding** questions listed below:

- pages 215-217 #1→7, 9→11, and 13
- pages 229-233 #1→11, 13, 14, 16, 18, 20, 21, 24, 26, and 28
- pages 240-243 #1→10, and 15
- pages 254-257 #1→4, 6→9, 12, 13, 16, 17, and 20

## REVIEW AND CHALLENGE



1. In the Math 11 text, complete the Chapter 4 Review pages 258-260.
2. Complete all Journal activities.

**Key Terms:** quadratic equation, roots, zeros, extraneous root, quadratic formula, discriminant.

## PRACTICE QUIZZES

[Practice quiz #1](#)

[Practice quiz #2](#)

[Practice quiz #3](#)

[Practice quiz #4](#)