

Quadratic Functions

Curriculum Expectations

By the end of this course, students will:

- verify that $\sqrt{ab} = \sqrt{a}\sqrt{b}$, $a \geq 0, b \geq 0$, and use this relationship to simplify radicals and radical expressions obtained by adding, subtracting, and multiplying
- determine the number of zeros of a quadratic function, using a variety of strategies
- determine the maximum or minimum value of a quadratic function, using an algebraic method
- solve problems involving quadratic functions, represented using function notation
- determine the transformational relationship among the family of quadratic functions that have the same zeros
- determine the algebraic representation of a quadratic function, given the real roots of the corresponding quadratic equation and a point on the function
- solve problems involving the intersection of a linear function and a quadratic function, graphically and algebraically

Schedule of Topics

Day	Topic	Homework	Questions?
1	Min/Max of Quadratics: CTS	p.31 #1-3, by CTS	
2	Min/Max of Quadratics: Partial Factoring	p.31 #1-3, by PF	
3	Min/Max of Quadratics: Applications	p.31 #5-12,14,15	
4	Working With Radicals	p.39 #1-16	
5	Solving Quadratics: Factoring and QF	p.49 #1,3,5-8,11	
6	Solving Quadratics: Applications	p.50 #12-19,21,23,24	
7	Mix of Min/Max and Solving Problems	Worksheet	
8	Determining Equations of Quadratics	p.57 #1-6,8,11,14,15,16-19,20	
9	Solving Linear-Quadratic Systems	p.67 #1,3,5,7,10,11,14,15	
10	Unit Review	pp.70-73	

Assessment and Evaluation

Quiz/Test/Task	Date	K	A	T	C

Skills Checklist

At the end of this strand, I am able to:

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|---|------------|-----------|------------|
| • Determine the vertex of a quadratic function by CTS | [] Always | [] Often | [] Seldom |
| • Determine the vertex of a quadratic function by (partial) factoring | [] Always | [] Often | [] Seldom |
| • Determine whether the vertex of a parabola is a min or max | [] Always | [] Often | [] Seldom |
| • Solve problems involving the min/max of a quadratic function | [] Always | [] Often | [] Seldom |
| • Simplify radicals and expressed them in mixed form | [] Always | [] Often | [] Seldom |
| • Perform algebraic operations involving radicals | [] Always | [] Often | [] Seldom |
| • Solve quadratic equations by factoring | [] Always | [] Often | [] Seldom |
| • Solve quadratic equations using the quadratic formula | [] Always | [] Often | [] Seldom |
| • Use the discriminant to determine the number/nature of roots | [] Always | [] Often | [] Seldom |
| • Solve problems involving the roots of a quadratic function | [] Always | [] Often | [] Seldom |
| • Distinguish between “min/max” and “roots” problems | [] Always | [] Often | [] Seldom |
| • Identify a family of quadratic functions, given their roots | [] Always | [] Often | [] Seldom |
| • Determine a quadratic's equation, given its roots and a point | [] Always | [] Often | [] Seldom |
| • Use the discriminant to determine the number of intersections of a quadratic function and a linear function | [] Always | [] Often | [] Seldom |
| • Determine any point(s) of intersection between a quadratic function and a linear function | [] Always | [] Often | [] Seldom |

Student Comments

Parent/Guardian Comments

Teacher Comments