

# INTEGRATED MATH 2 - KEY OBJECTIVES

## QUADRATIC FUNCTIONS

### WHAT:

#### Solving Quadratic Equations:

- Solve quadratic equations by taking the square root of both sides. (Section 9A)
- Solve quadratic equations by factoring. (Section 9B)
- Solve quadratic equations by using the quadratic formula. (Section 9E)
- Use quadratic equation solving techniques in application problems. (Section 9D)
- *Extension: Solve quadratic equations by completing the square. (Section 9C)*  
*These concepts are primarily covered in chapter 9 of the MYP5+ textbook.*

#### Using Quadratic Functions:

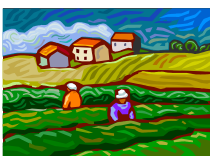
- Identify whether or not a function is quadratic. (Section 17A)
- Use a quadratic function to find unknown values, especially in application problems. (Section 17A)
- Graph quadratic functions (parabolas) and be able to find and identify key features of the graph, including
  - x-intercepts/zeros/solutions/roots (Section 17C)
  - the y-intercept (Section 17C)
  - the vertex (maximum/minimum point) (Section 17D)
  - the axis of symmetry (Section 17D)
- Understand the relationship between “vertex form” and transformations of parabolas. (Section 17B)
- Given a quadratic function in vertex form, identify the vertex and graph the parabola. (Section 17B)
- Use quadratic functions in application problems involving optimisation (finding min/max). (Section 17E)  
*These concepts are primarily covered in chapter 17 of the MYP5+ textbook.*

#### Quadratic Systems:

- Solve systems of equations involving both linear and quadratic functions.  
*This concept is primarily covered in supplemental notes/handouts from class.*

### WHY:

How do companies figure out how to maximize profit?



How do farmers figure out how to maximize area?

In math, why do the same things sometimes look different?

Do some problems have more than one solution?

Can there ever be more than one way to solve a problem?

