

## UNIT 5: QUADRATIC RELATIONS

| Day | Topic   | Practice  |
|-----|---|---|
| 1   | Intro to Quadratic Relations & Graphing   | Graphing Parabolas Using Table of Values  |
| 2   | Key Features of the Parabola  | <ul style="list-style-type: none"> <li>• Axis of Symmetry</li> <li>• x-intercepts (zeros)</li> <li>• y-intercept (and its reflected point)</li> <li>• Direction of opening</li> <li>• Vertex</li> </ul> |
| 3   | <b>QUIZ</b><br>Characteristic of Quadratic Relations  | Using First and Second Differences<br>Distinguish between Linear and Quadratic  |
| 4   | Standard and Factored Form of a Quadratic Equation<br>$y = ax^2 + bx + c$ $y = a(x-r)(x-s)$ | <ul style="list-style-type: none"> <li>• y – intercept</li> <li>• x – intercepts by factoring</li> </ul>  |
| 5   | <b>QUIZ</b><br>Standard Form of a Quadratic Equation  | Graph using Key Features  |
| 6   | Quadratic Word Problems   | Solve Real-Life questions   |
| 7   | Assignment  |   |
| 8   | Review and Practise Test  |   |
| 9   | <b>UNIT TEST</b>  |   |

### Graphing Using Vertex Form

$$y = a(x - h)^2 + k$$

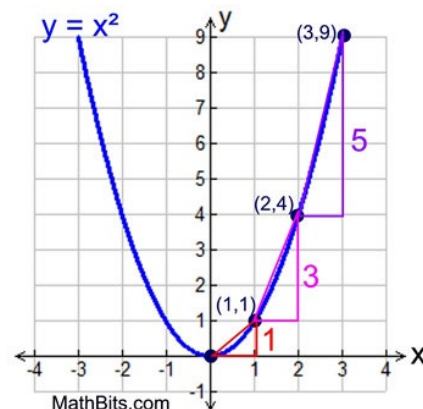
Vertex:  $(h, k)$

Axis of symmetry:  $x = h$

VERTICAL LINE

If  $a$  is positive, then it opens up.

If  $a$  is negative, then it opens down.

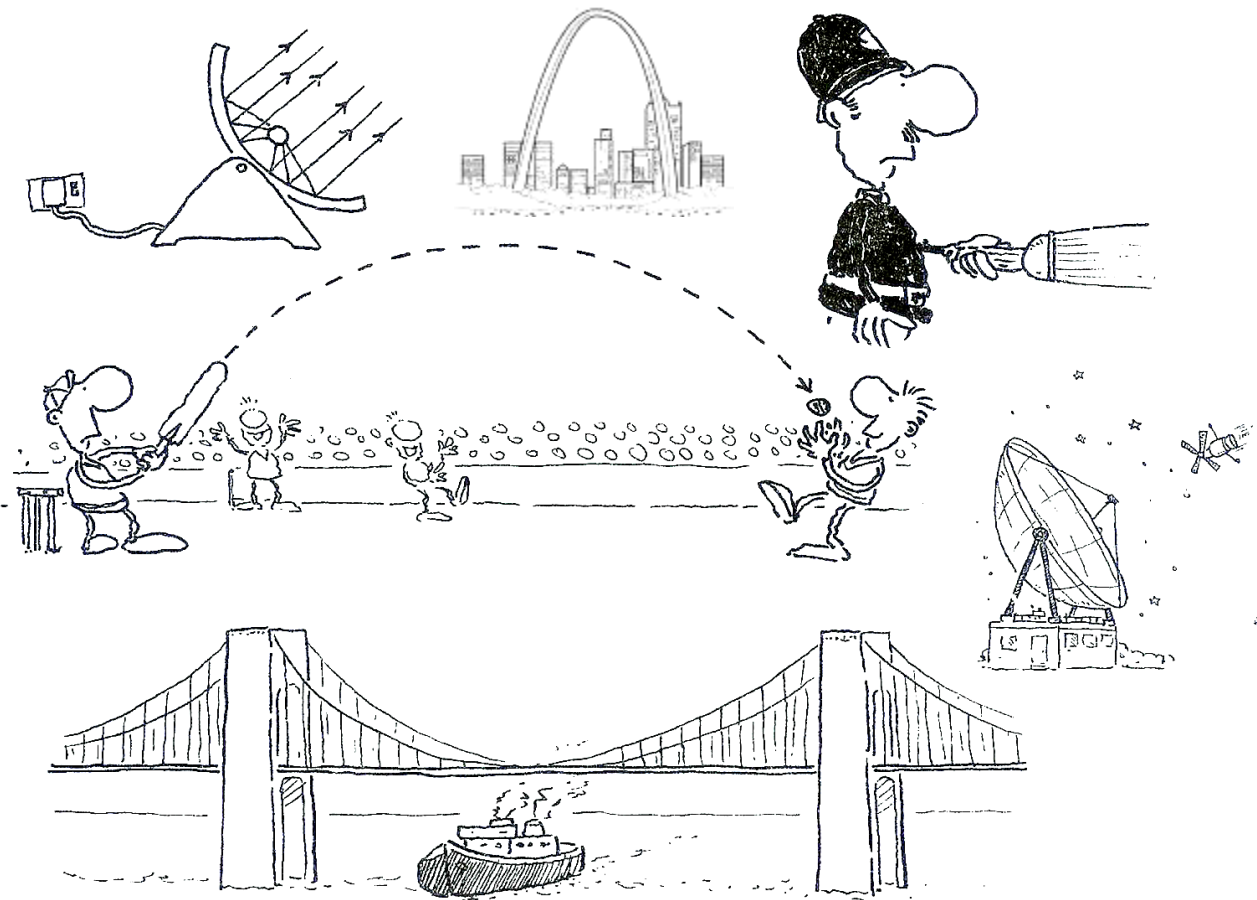


# AN INTRODUCTION TO QUADRATIC RELATIONS

The graph that characterizes a \_\_\_\_\_ is a \_\_\_\_\_ called a \_\_\_\_\_ that is expressed in the form \_\_\_\_\_. Note the \_\_\_\_\_ term.

The **parabolic curve** is very common in: a) \_\_\_\_\_, b) \_\_\_\_\_, c) \_\_\_\_\_.

Some examples of parabolic curves:



What other parabolic curves can you think of?