6.3 Key Features of Quadratic Relations -pages 254-263

1 Axis of Symmetry x = 2

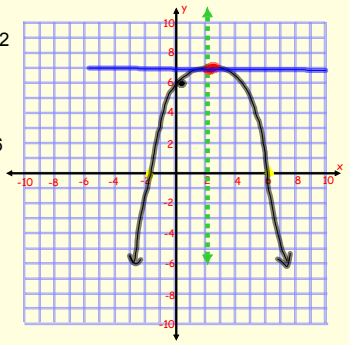
x,y

2 Vertex (2,7)

3 X- Intercepts -2 and 6

4 Maximum y = 7

5 y- intercept - + 6



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6.3

Features of a Parabola

Vertex - The point where the parabola changes direction.

Maximum/Minimum - The bottom or top of the parabola.
The y - value at the vertex.

Axis of Symmetry - A vertical line that passes through the vertex.
Equation is x = The x coordinate of the vertex.

X - Intercepts - The 2 points where the parabola crosses the x axis.

y- intercept - The point where the graph crosses the y axis.

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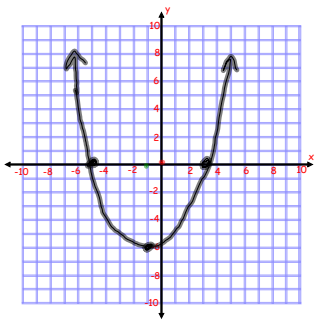
Vertex -

Maximum/Minimum

Axis of Symmetry

X - Intercepts

y- intercept -



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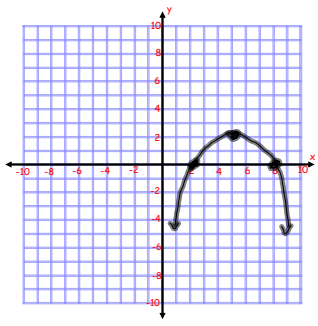
Vertex -

Maximum/Minimum

Axis of Symmetry

X - Intercepts

y- intercept -



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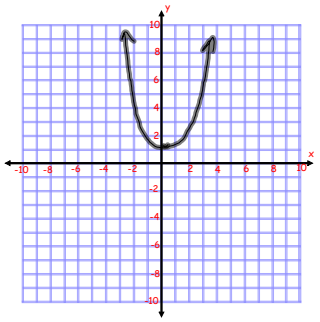
Vertex -

Maximum/Minimum

Axis of Symmetry

X - Intercepts

y- intercept -



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SECOND DIFFERENCES

Another way to determine if a relationship is a quadratic is to determine the second differences. If the first differences are the same the relationship is linear, however if the second differences are the same then the relationship is quadratic and the graph will be a parabola.

example

x	y	F. D.	S.D.
1	2	5-2=3	6 - 3 = 3
2	5	11-5=6	9 - 6 = 3
3	11	20-11=9	
4	20		

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Textbook Example 1 - page 257

Assignment - page 260 # 1
page 262 # 4 , 6
page 275 # 5
Handout- second difference

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Jan 11-1:21 PM