

EXTRA PRACTICE — Exercises

Copyright © 2003 by Videotext *Interactive*

Unit IX – The Conic Sections

Part A – Parabolas - The Quadratic Function

Lesson 6 – Intercepts

Sketch the graph of the solution set of each of the following second-degree equations. In addition, identify the x -intercepts and the y -intercepts, if they exist, to make each sketch more accurate.

1. $y = -2x^2 + 2x + 1$

2. $y = -2x^2 - 2x + 3$

3. $y = 4x^2 + 8x + 1$

4. $y = 3x^2 - 24x + 50$

5. $y = 4x^2 - x + 8$

EXTRA PRACTICE — Answer Key

Copyright © 2003 by Videotext Interactive

Unit IX – The Conic Sections

Part A – Parabolas - The Quadratic Function

Lesson 6 – Intercepts

Sketch the graph of the solution set of each of the following second-degree equations. In addition, identify the x -intercepts and the y -intercepts, if they exist, to make each sketch more accurate.

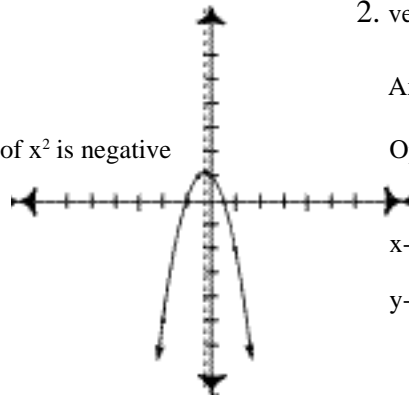
1. vertex: $-\frac{1}{4}, \frac{9}{8}$

Axis of Symmetry: $x = -\frac{1}{4}$

Opens Down - coefficient of x^2 is negative

x -intercept: $(-1, 0)$ $(\frac{1}{2}, 0)$

y -intercept: $(0, 1)$



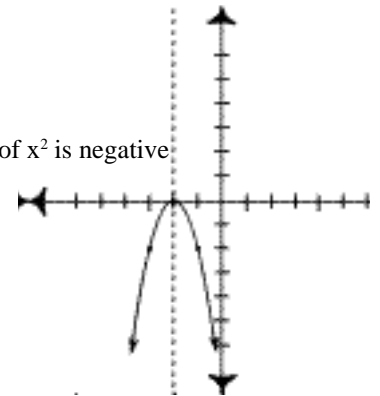
2. vertex: $(-2, 0)$

Axis of Symmetry: $x = -2$

Opens Down - coefficient of x^2 is negative

x -intercept: $(-2, 0)$

y -intercept: $(0, -8)$



3. vertex: $(-1, -3)$

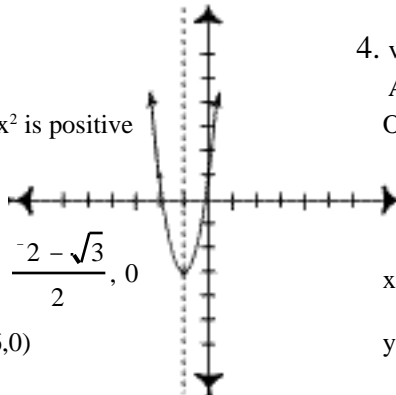
Axis of Symmetry: $x = -1$

Opens Up - coefficient of x^2 is positive

x -intercepts: $\frac{-2 + \sqrt{3}}{2}, 0$ $\frac{-2 - \sqrt{3}}{2}, 0$

$(-1.134, 0)$ $(-1.866, 0)$

y -intercept: $(0, 1)$



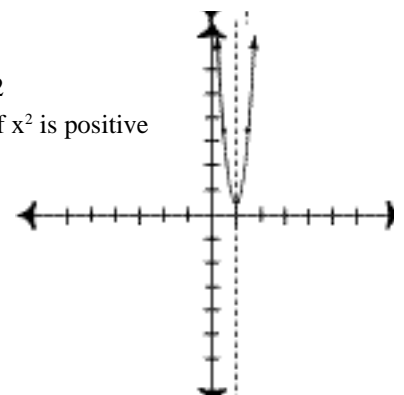
4. vertex: $(4, 2)$

Axis of Symmetry: $x = 2$

Opens Up - coefficient of x^2 is positive

x -intercept: none

y -intercept: $(0, 50)$



5. vertex: $(-2, 0)$

Axis of Symmetry: $x = \frac{1}{8}$

Opens Down - coefficient of x^2 is negative

x -intercept: $(-2, 0)$

y -intercept: $(0, 8)$

