The Great Quadratic - Graphing Quadratic Equations

The graph of a quadratic equation is called a _____.

A parabola has a maximum or minimum point called a _____.

There are three forms of a quadratic equation:

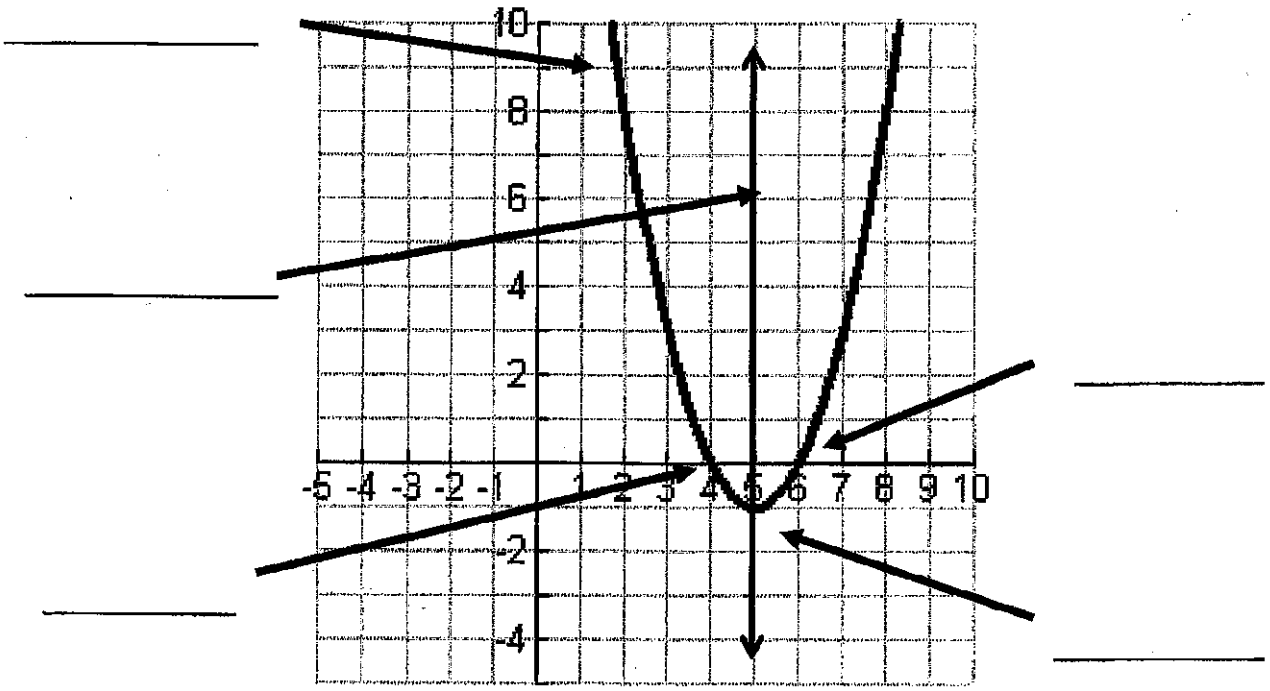
I. Intercept Form _____

II. Vertex Form _____

III. Standard Form _____

The equation $x = \frac{-b}{2a}$ gives the equation of the _____.

This is a _____ line.



_____

_____

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Graphing

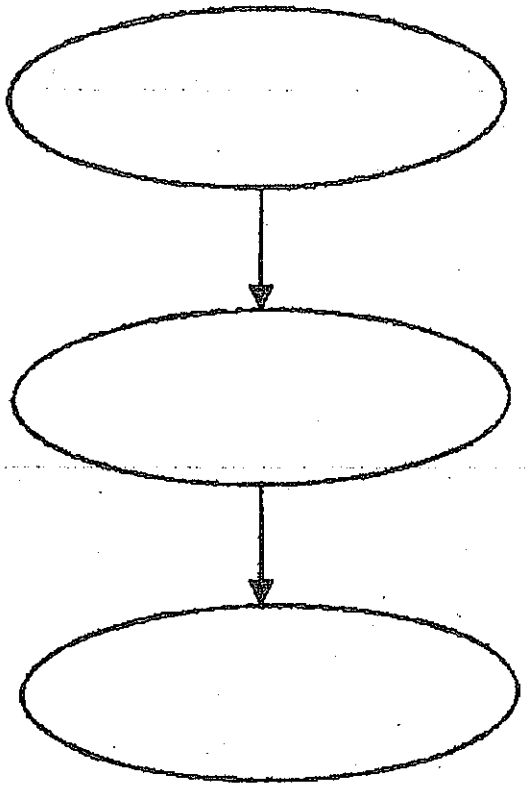
I. Intercept Form

$f(x) = a(x - p)(x - q)$

p and q are the _____.

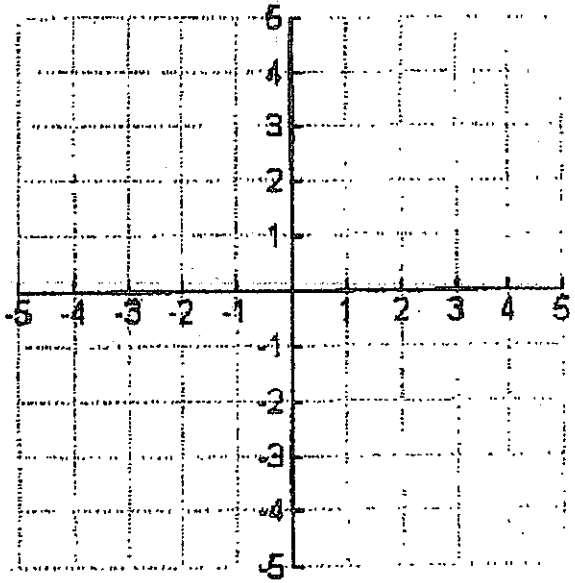
a determines _____ and _____.

Steps:



Example:

Graph $f(x) = -(x - 3)(x + 1)$

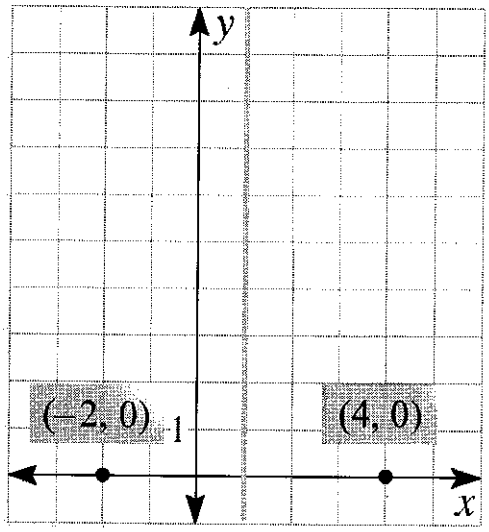


EXAMPLE Graphing a Quadratic Function in Intercept Form

Graph $y = -(x + 2)(x - 4)$

The x-intercepts occur at $(-2, 0)$ and $(4, 0)$

The axis of symmetry lies half-way between these points, at $x = 1$.

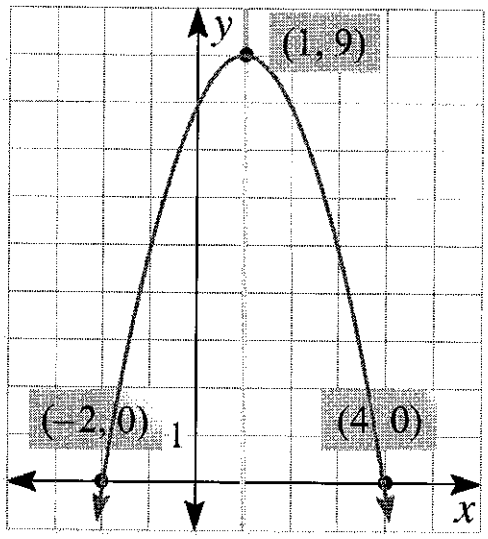


EXAMPLE Graphing a Quadratic Function in Intercept Form

Graph $y = -(x + 2)(x - 4)$

So, the x-coordinate of the vertex is $x = 1$ and the y-coordinate of the vertex is:

$$y = -(1 + 2)(1 - 4) = 9$$



Name: Date: Period:

Practice Worksheet: Graphing Quadratic Functions in Intercept Form $f(x)=a(x-p)(x-q)$

For #1-6, label the x-intercepts, axis of symmetry, vertex, y-int., and at least one more point on the graph.

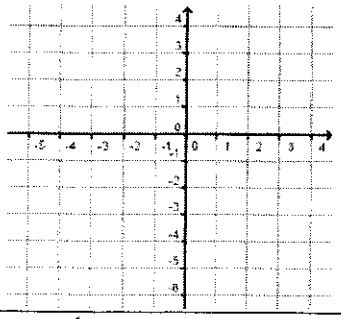
1] $y=\frac{1}{2}(x+4)(x-2)$

x-intercepts: (_____, 0) (_____, 0)

Axis of Symmetry is x=_____

Vertex: (____, ____)

y-intercept: (0,_____)



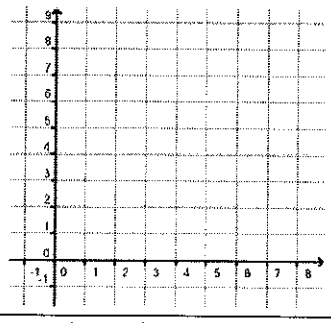
2] $y=-\frac{1}{2}x(x-8)$

x-intercepts: (_____, 0) (_____, 0)

Axis of Symmetry is x=_____

Vertex: (____, ____)

y-intercept: (0,_____)



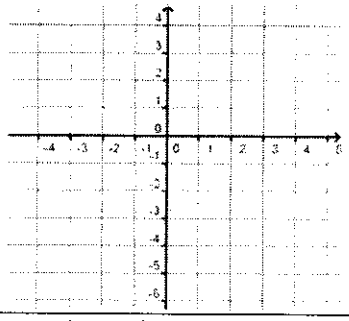
3] $y=(x+2)(x-2)$

x-intercepts: (_____, 0) (_____, 0)

Axis of Symmetry is x=_____

Vertex: (____, ____)

y-intercept: (0,_____)



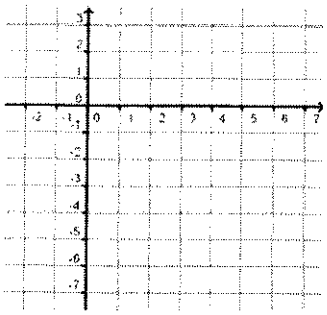
4] $y=-\frac{1}{3}(x+1)(x-5)$

x-intercepts: (_____, 0) (_____, 0)

Axis of Symmetry is x=_____

Vertex: (____, ____)

y-intercept: (0,_____)



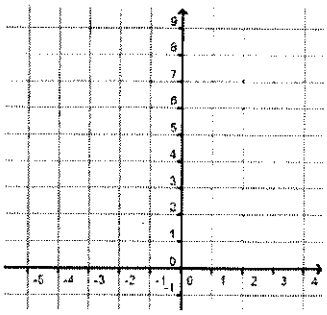
5] $y=4(x+2)(x+1)$

x-intercepts: (_____, 0) (_____, 0)

Axis of Symmetry is x=_____

Vertex: (____, ____)

y-intercept: (0,_____)



6] $y=-(x-3)(x-3)$

x-intercepts: (_____, 0) (_____, 0)

Axis of Symmetry is x=_____

Vertex: (____, ____)

y-intercept: (0,_____)