

Active Vocabulary

New Vocabulary Label each box with the terms at the left.

quadratic function

quadratic term

linear term

constant term

parabola

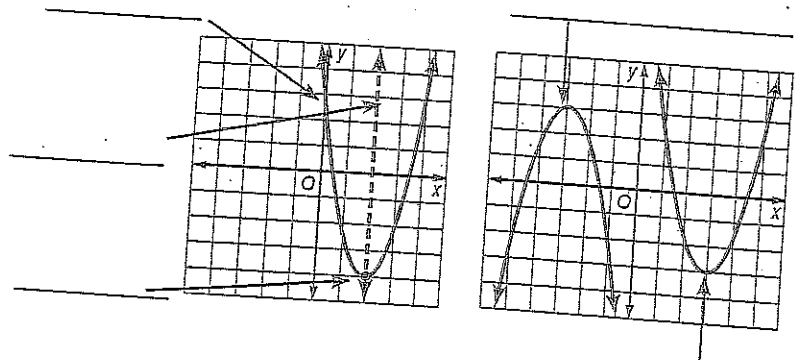
axis of symmetry

vertex

maximum value

minimum value

$$f(x) = \underbrace{2x^2}_{\text{quadratic term}} + \underbrace{2x}_{\text{linear term}} - \underbrace{4}_{\text{constant term}}$$



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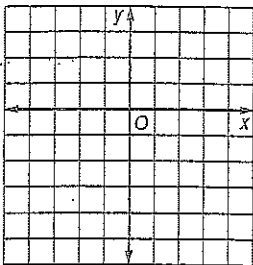
Ex: (a) Determine whether the function has a max or min.

(b) State the max or min VALUE!

$$f(x) = -x^2 + 4x - 1$$

Graph Quadratic Functions

Graph $f(x) = 2x^2 + 2 + 8x$. Fill in the missing verbal and mathematical steps.

	Write the function in standard form.															
	Identify the coefficients.															
↓																
	Identify the y-intercept.															
↓																
<table border="1" style="border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">x</th> <th style="width: 50%;">y</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	x	y													Make a table. Put the vertex in the center.	
x	y															
↓	Graph the ordered pairs. Check the axis of symmetry.															

Maximum and Minimum Values

$f(x) = -2x^2 + 12x - 5$.

Find x-coordinate of vertex.	Max/Min = _____
Find y-coordinate of vertex.	Value = _____

Helping You Remember

How can you remember the way to use the x^2 term of a quadratic function to tell whether it has a maximum or a minimum value?
