

The Parabola

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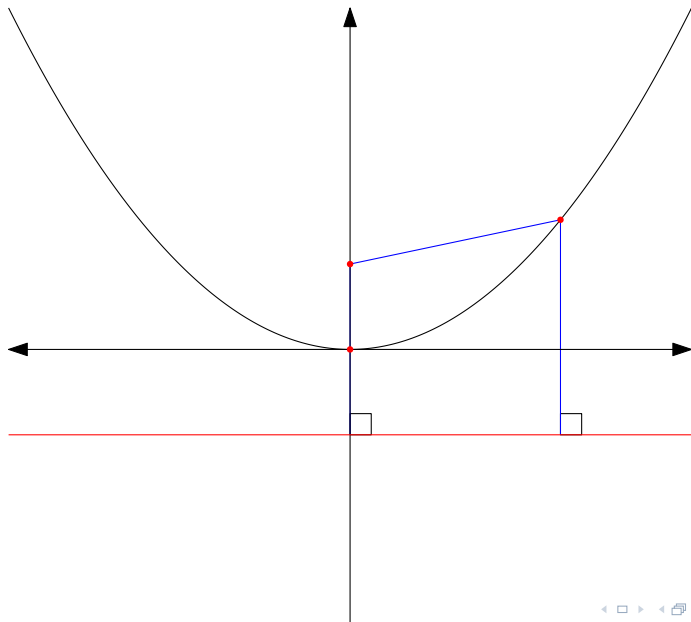


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Announcements

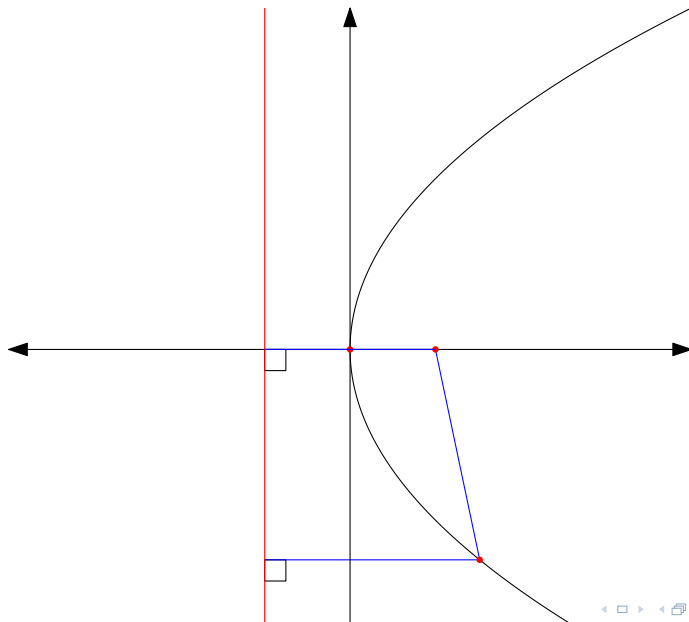
- ① Homework
- ② Quiz in Canvas
- ③ Office hours 10am - 11am.

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STANDARD FORMS OF PARABOLAS WITH VERTEX (0, 0)

[Table 1](#) and [Figure 5](#) summarize the standard features of parabolas with a vertex at the origin.

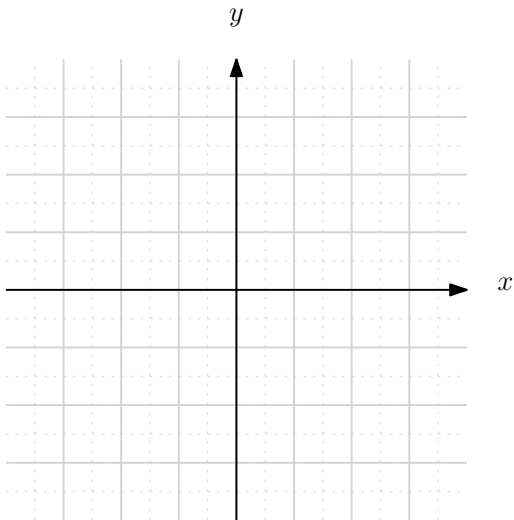
Axis of Symmetry	Equation	Focus	Directrix	Endpoints of Latus Rectum
x -axis	$y^2 = 4px$	$(p, 0)$	$x = -p$	$(p, \pm 2p)$
y -axis	$x^2 = 4py$	$(0, p)$	$y = -p$	$(\pm 2p, p)$

Table 1

Example

Graph

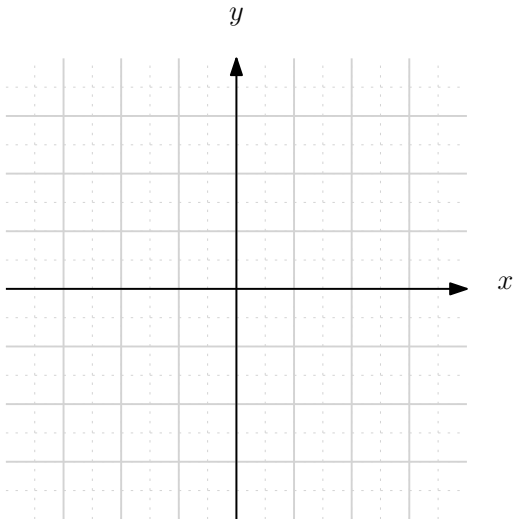
$$8y = x^2$$



Example

Graph

$$16x = y^2$$



Example

What is the equation of a parabola that has a focus of $(-\frac{1}{2}, 0)$ and a directrix $x = \frac{1}{2}$?

