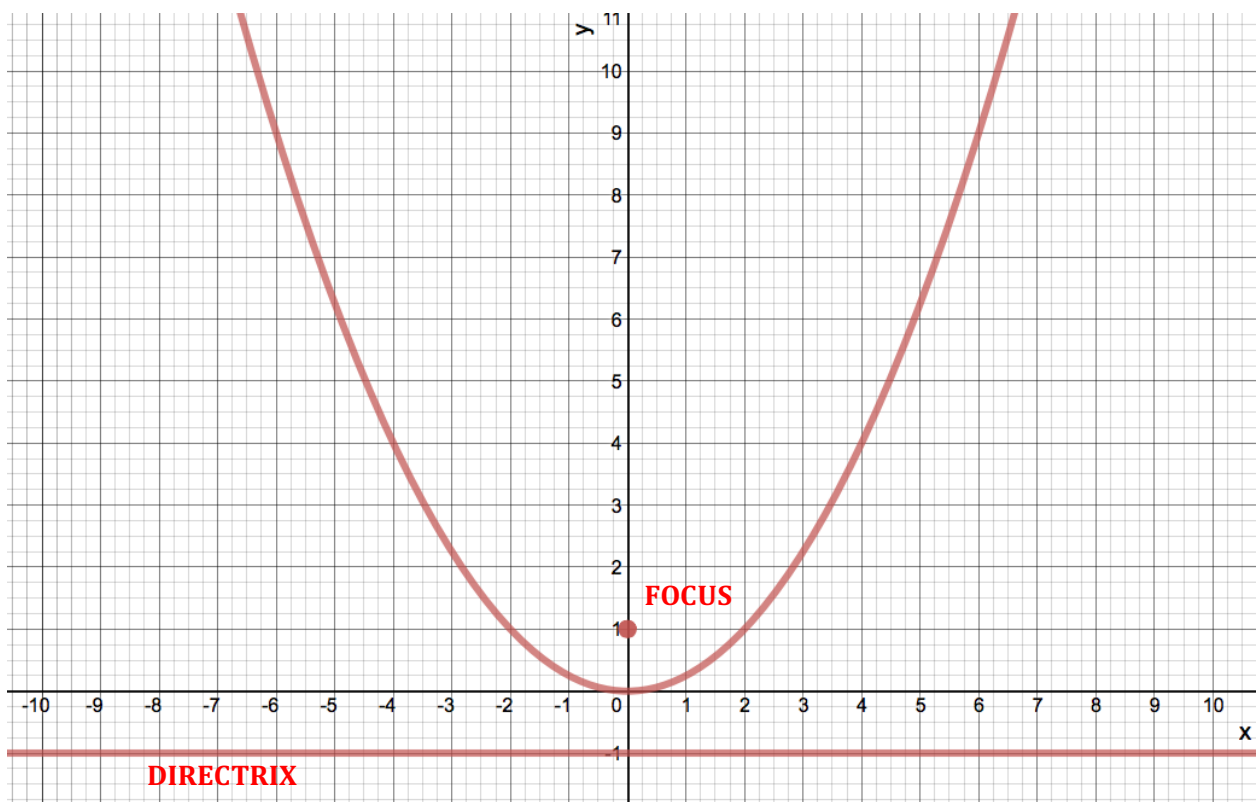


**DEFINITION:** A parabola is the set of points that are equal distance from a fixed point (called the **focus**) and a fixed line (called the **directrix**).

1. Derive the equation  $y = \frac{x^2}{4}$  using the Pythagorean Theorem and the definition of a parabola.
  - a. Begin by adding and labeling a general point on the parabola.
  - b. Mark everything you know on this parabola and use the tools that you used in previous episodes to determine the x and y values of a coordinate.
  - c. Derive the equation.



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