

**Activity 3 of Lesson 5:**  
***Derive the Equation of a Parabola with  $p = 5$  and Vertex  $(9, 13)$***

Use the Pythagorean Theorem and the definition of a parabola to derive an equation for the parabola with  **$p = 5$**  and **vertex  $(9, 13)$** . Make note of anything that makes this parabola harder to work with than if the vertex was at the origin.

