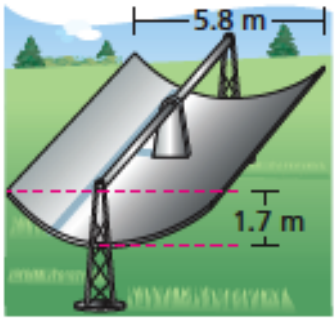
Algebra 2 Assignment 119 Tuesday October 13 2015 Hour Name

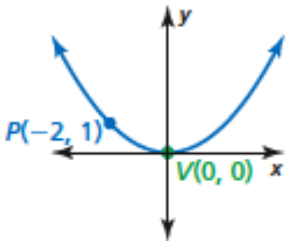
1. Solar energy can be concentrated using long troughs that have a parabolic cross section as shown in the figure.



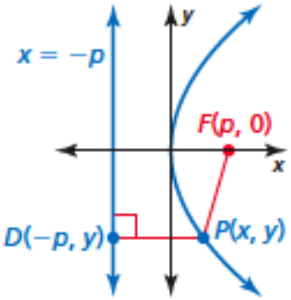
a. Write an equation to represent the cross section of the trough.
b. What are the domain and range in this situation?
c. What do they represent?

2. As $|p|$ increases, how does the width of the graph of the equation $y = \frac{1}{4p}x^2$ change? Explain.

3. The distance from point P to the Directrix is 2 units. Write an equation of the parabola.



4. Use the Distance Formula to derive the equation of a parabola that opens to the right with Vertex $(0, 0)$, Focus $(p, 0)$, and Directrix: $x = -p$.



5. The *latus rectum* or *focal width* of a parabola is the line segment that is parallel to the directrix, passes through the focus, and has endpoints that lie on the parabola. Find the length of the latus rectum of the parabola shown.