Section 10.2 – Parabolas Day 2

Parametric Form of Parabola Equations:

$4c(y-k) = (x-h)^2$ becomes $x = T$ and $y = \frac{1}{4c}(T-h)^2 + k$ in parametric form.

$4c(x-h) = (y-k)^2$ becomes $x = \frac{1}{4c}(T-k)^2 + h$ and $y = T$ in parametric form.

Why would we even want to deal with parametric form of the parabola?

Graph $16(x+3) = (y-1)^2$ on your graphing calculator.

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**Example 1:** Rewrite each parabola in standard form AND parametric form.

<table>
<thead>
<tr>
<th>a. $y = -\frac{1}{8}x^2 + 2$</th>
<th>b. $y^2 - 2x + 2y + 7 = 0$</th>
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<tbody>
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Example 2: Write the equation of the parabolas in both standard AND parametric form given the following information.

a. Vertex at the origin and directrix $y = 1$

b. Vertex at $(5, 2)$ and focus $(3, 2)$

c. Focus at $(2, 2)$ and directrix $x = -2$

d. 

e. 
