

Calculus with Analytic Geometry II

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1 Parametric Equations Worksheet

- I. Find the vertex and foci of the parabola $y = \frac{1}{2} - x - \frac{1}{2}x^2$.
- II. Find the center, foci, and eccentricity of the ellipse $4x^2 + y^2 - 8x + 4y - 8 = 0$.
- III. Find the center, foci, and eccentricity of the hyperbola

$$\frac{x^2}{4} - \frac{y^2}{9} = 1.$$

- I. Parameterize the parabola given by

$$(x - 1)^2 = 8(y - 1)$$

- II. Parameterize the ellipse given by

$$9x^2 + 4y^2 - 18x + 24y + 9 = 0$$

- III. Parameterize the hyperbola given by

$$x^2 - 4y^2 + 2x + 8y - 7 = 0$$