

Assignment #3

Due on Monday, February 2, 2015

Read Section 3.1, on *Parametrized Curves in the Plane*, in the class lecture notes at <http://pages.pomona.edu/~ajr04747/>

Read Section 17.1, on *Parametrized Curves*, in *Calculus: Multivariable*, by McCallum, Hughes–Hallett, Gleason, et al.

Do the following problems

1. Give a parametrization of the portion of the graph of $y = \sqrt{x}$ from the point $(1, 1)$ to the point $(16, 4)$.

Sketch the curve.

2. Give a parametrization of the portion of the ellipse given by the graph of the

$$x^2 + 4y^2 = 4$$

in the first quadrant.

Sketch the curve.

3. Give a parametrization of a circular arc from the point $P(0, 0)$ to the point $Q(10, 0)$ on a circle of radius 5.

Sketch the curve.

4. Give a parametrization of the straight line segment from the point $P(2, 5)$ to the point $Q(12, 9)$.

Sketch the curve.

5. Give a parametrization of the straight line through the point $P(2, 1)$ in the direction of the vector $\vec{v} = \hat{i} + 2\hat{j}$.

Sketch the curve.