10.3 Parametric Equations and Calculus

Name: Date: August 4, 2015

P 2. Find dy/dx

$$x = \sqrt[3]{t},\ y = 4 - t$$

P 4. Find dy/dx

$$x = 2e^{\theta},\ y = e^{-\theta/2}$$

P 6. Find dy/dx and d^2y/dx^2, and find the slope and concavity when $t = 1$

$$x = \sqrt{t},\ y = 3t - 1$$

P 9. Find dy/dx and d^2y/dx^2, and find the slope and concavity when $\theta = \pi/4$

$$x = 4\cos\theta,\ y = 4\sin\theta$$

P 16. Find an equation of the tangent line at the point $(-1, 3)$ on the curve.

$$x = 2 - 3\cos\theta,\ y = 3 + 2\sin\theta$$

P 33. Find all points (if any) of horizontal and vertical tangency to the curve.

$$x = 3\cos\theta,\ y = 3\sin\theta$$

P 65. Find the area of the surface generated by revolving the curve abou the x-axis.

$$x = 2t,\ y = 3t,\ 0 \leq t \leq 3$$