

Assignment #7

Name _____

Due 6 November 2009

1. In each case, use the rules of differentiation to find y' .

(a) $y = 2\sqrt{t} + \frac{5t}{t^4 + 3t^2 + 7}$

(b) $y = \frac{3t^2 + 5t - 4}{\sqrt{t}}$

2. The tangent line to the curve $y = f(x)$ at $P(1, 3)$ is $y = 2x + 1$. The tangent line to the curve $y = g(x)$ at $Q(1, 4)$ is $y = -x + 5$.

(a) What are $f'(1)$ and $g'(1)$?

(b) Let A be the point on the curve $y = f(x)g(x)$ with x -coordinate 1. Find the y -coordinate of A .

(c) Find the equation of the tangent line to the curve $y = f(x)g(x)$ at the point A .