# Math 151, Quiz # 7, October 22, 2013

**1.** Let $y = \cos(\pi x + \ln(x))$. Find $\dfrac{dy}{dx}$.

**2.** Let $x^2 e^y = x \cos(y)$. Find $\dfrac{dy}{dx}$.

**3.** A right triangle is growing. The legs have lengths $x$ and $y$ (which change with time $t$). If at a certain time, $x = 5$, $y = 6$, $\dfrac{dx}{dt} = 3$ and $\dfrac{dy}{dt} = 10$ find the rate at which the area of the triangle is increasing at this time.