**Dawson College**: **Calculus I**: 201-NYA-05 S19 December 4, 2012

**Last Name:** _____

**First Name:** _____

**Student ID:** _____

# Quiz 10

**Question 1.** *(5 marks)* Find the area of the largest trapezoid that can be inscribed in a circle of radius 1 and whose base is a diameter of the circle. (Make sure to justify that this is indeed the largest trapezoid).

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**Question 2.** *(5 marks)* Find $f(x)$ given that $f''(x) = 2e^t + 3\sin t, \quad f'(0) = 0, \quad f(\pi) = 0.$

**Question 3.** Evaluate the following indefinite integrals:

**(a)** *(3 marks)* $\displaystyle\int \frac{\sin(\ln x)}{x}\,dx$

**(b)** *(3 marks)* $\displaystyle\int \frac{x^3}{\sqrt{x^2+1}}\,dx$