Math 102

Quiz#1

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Name:

ID No.:

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1. Evaluate $I = \int_0^{\frac{3\sqrt{2}}{4}} \frac{1}{\sqrt{9-4s^2}}\, ds$.

2. Express the following limit as definite integral:

$$\lim_{n\to\infty} \left\{ \sum_{i=1}^{n} \left[\left(\frac{\pi}{4n}\right) \left(\cos \frac{i\pi}{2n}\right)^2 \right] \right\} \text{ on } \left[0, \frac{\pi}{2}\right].$$

3. If $F(x) = \int_1^x f(z)dz$, where $f(x) = \int_1^{x^2} \frac{\sqrt{1+u^2}}{u} du$, find F' (1).

4. If a function f *is continuous everywhere*, $\int_1^x f(z)dz = 5$, and $\int_1^y f(u)du = 5$. Find $\int_y^x f(s)ds$