

King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences
Math 102.13 and 17 Quiz I Second Semester 2006-2007 (062)

ID #: _____ NAME: _____

Serial # _____ Section #: _____

1. Find $\int \frac{1}{1 + \sin x} dx$.

2. Evaluate $\lim_{n \rightarrow \infty} \frac{\sqrt{1} + \sqrt{2} + \sqrt{3} + \cdots + \sqrt{n}}{n^2}$.

3. Evaluate $\int_0^3 |x - 2| dx$.

4. Find $\frac{d}{dx} \int_0^x |u| du$.

5. Find $\frac{d}{dx} \int_a^b F'(x) dx$.

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1. Find $\int \tan^2 x \, dx$.

2. Evaluate $\lim_{n \rightarrow \infty} \frac{e^{1/n} + e^{2/n} + \dots + e^{n/n}}{n}$.

3. Evaluate $\int_0^\pi |\cos x| \, dx$.

4. Evaluate $\frac{d}{dx} \int_{\sin x}^0 \sqrt{1-t^2} \, dt$.

5. Evaluate $\frac{d}{dx} \int \cos x \, dx$.

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1. Find $\int \left(\sqrt{x} + \frac{1}{\sqrt{x}} \right)^2 dx$.

2. Evaluate $\lim_{n \rightarrow \infty} \frac{1^4 + 2^4 + 3^4 + \dots + n^4}{n^5}$.

3. Evaluate $\int_{-1}^1 |e^x - 1| dx$.

4. If $F(x) = \int_0^x \frac{\cos t}{t^2 + 3}$, find $\underline{F(0)}$, $\underline{F'(0)}$, and $\underline{F''(0)}$.

5. Evaluate $\int_0^{\pi/2} \frac{d}{dt} \sin x dx$.