King Saud University | Mathematics department.
Math (106) | 1st Quiz.
Duration : 30 minutes

Name:
ID
Serial Number:

## Evaluate the integral :

**1-** $\int (x - \frac{1}{x})^2 \, dx$

$$\int (x^2 - 2 * x * \frac{1}{x} + \frac{1}{x^2}) \, dx = \frac{x^3}{3} - 2x - \frac{1}{x} + C$$

**2-** $\int \frac{(cos \sqrt[3]{x})}{\sqrt[3]{x^2}}$ dx

$$u = \sqrt[3]{x} \quad du = \frac{1}{3} x^{\frac{-2}{3}} dx = \frac{1}{3x^{\frac{2}{3}}} dx$$

$$3 \int cosu \, du = 3sinu + C$$

## Express the sum in terms of n :

$$\sum_{k=1}^{n} (K + 4K + 5)$$

$$\sum 5k + \sum 5 = 5 * \frac{n(n+1)}{2} + 5n = \frac{5n^2 + 15n}{2}$$