King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 101 Section 19 Quiz IV (Term 151)

Name : ..... **ID** #..... Serial #: .....

1. If $\cosh x = \sqrt{2}$ and $x < 0$, then find $\coth x + \operatorname{csch} x$

2. Find $\dfrac{d}{dx}(\sinh^{-1}(\operatorname{csch} x))$ at $x = \ln 3$

3. The volume of a cube is increasing at the rate of $270\,cm^3/min$ at the instant its edges and $6\,cm$ long. At the same instant, find the rate at which the lengths of the edges is increasing.

4. Find the linearization of $f(x) = x^x$ at $x = 1$.

5. The radius of a circular disk is measured to be $5\,cm$ with a maximum error in measurement of $0.1\,cm$. Using differentials, find the maximum error in calculating circumference of the circular disk.