**K**ing **F**ahd **U**niversity for **P**etroleum and **M**inerals
Department of Mathematics & Statistics
Term 132 Math 102 (32) Quiz#5 (10.1, 10.2, and 10.3)
Family Name: S.r#

Q1. Determine whether the sequence **Converge or Diverge**. **Find the limit** if it is Convergent.

*i*. $a_n = \csc^{-1}(n)$

*ii*. $a_n = \sqrt[n]{\dfrac{3^n + 4^n}{2^n + 7^n}}$

*iii*. $a_n = \dfrac{(-3)^n}{3^n + 3}$

Q2. **Find the sum,** if the series is convergent, and **explain** if it is divergent

*i*. $\sum_{n=2}^{\infty} 2^{1-2n} \cdot 3^{n+2}$

*iii*. $\sum \left( \cos(\dfrac{1}{n+1}) - \cos(\dfrac{1}{n}) \right)$

Q3. Determine whether the series **Converge or Diverge**.

*i*. $\sum_{n=2}^{\infty} \left( \dfrac{1}{n \ln n} \right)$