King **F**ahd **U**niversity for **P**etroleum and **M**inerals
Department of Mathematics & Statistics
Term 131 Math 102 (09) Quiz#7 (10.1)
Family Name: S.r#

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

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

ii. $a_n = \dfrac{n^2(2n-2)!}{(2n)!}$

iii. $a_n = \sqrt[n]{3^n + 4^n}$

iv. $a_n = n\sin\left(\dfrac{1}{n}\right)$

v. $a_n = \dfrac{(-2)^n}{2^n + 1}$

vi. $a_n = (n^2 + n)^{\frac{1}{n}}$