Math 101 Tutorial Worksheet 6

There is an associated quiz due on BrightSpace on Tuesday, March 1 at 10:00 PM

Complete questions 1 and 2 stated below using the following a_n terms:

(a) $a_n = \dfrac{1}{n} - \dfrac{1}{n^2}$

(b) $a_n = \dfrac{n + \sin(e^n)}{\sqrt{n^5}}$

(c) $a_n = \cos^n\left(\dfrac{1}{n}\right)$

(d) $a_n = e^{-n} + \left(\dfrac{1}{2}\right)^n$

(e) $a_n = \dfrac{2^n}{(n+1)!}$

(f) $a_n = \dfrac{(n+1)!}{(n+3)!}$

1. Determine whether the sequence $\{a_n\}$ converges or diverges. If the sequence converges, find what it converges to. Show all your work to justify your conclusions.
2. Determine whether the series $\sum_{n=1}^{\infty} a_n$ converges or diverges. Show all your work to justify your conclusions.