Calculus Section 9.4 Limit Comparison Test  
-Use the limit comparison test to determine convergence or divergence.

Homework: page 616 #’s   
13 – 21 odd, 23 – 30 (omit 28)

Some series closely resemble others but you are unable to apply the Direct Comparison Test. If this is the case, there is a second comparison test called the Limit Comparison Test.

 is a good example where direct comparison will not work but limit comparison will.

**Limit Comparison Test**Suppose that an > 0, bn > 0, and

  
where L is *finite and positive*. Then the two series ∑an and ∑bn either both converge or both diverge.   
(further clarification: if L is finite and positive, then L cannot equal zero and L cannot equal infinity)

**Choosing what to compare:**

**Example) Determine the convergence or divergence of the following series**

1)

2)

3)