Calculus Section 9.4 Direct Comparison Test  
-Use the direct comparison test to determine convergence.

Homework: page 616 #’s 3 – 12, 49 – 54

The convergence tests so far (nth-term, geometric, integral, and p-series) have been fairly simple and the series have special characteristics that make finding convergence easy. Any slight deviation from those characteristics can yield a series where the previous tests would not apply. For example,  
1) is geometric, but is not.

2) is a p-series, but is not.

3) is easily integrated, but is not.

The direct comparison test is a tool that we can use to determine convergence for complicated, positive series by comparing them with simpler series.

**Direct Comparison Test**Let 0 < an ≤ bn for all n.  
1)   
2) 

**Example) Determine Convergence or Divergence**

1) 2)

3)