Calculus Section 9.2 Geometric Series  
-Use properties of infinite geometric series

Homework: page 601 #’s 7, 8, 15, 16, 25, 26, 29, 30, 33, 91-94

**Geometric Series**Series of the form are called **geometric series** with ratio r.   
If 0 < |r| < 1, then the geometric series converges. If |r| ≥ 1, then the series diverges.

**Example) Determine convergence or divergence of the series.**  
1) 2) 3)

4) 5)

The Geometric Series is one of the few series where we actually find the sum instead of just saying it converges or diverges.

The sum of a Geometric series is given by , provided the series converges.

Notice that this summation starts at n = 0. Starting values other than n = 0 will impact how we evaluate the sum.

**Example) Find the sum of the following geometric series.**

1) 2)

3) 4)