

Homework Number Five

This homework assignment is due Wednesday, October 19th by 4 p.m., either to me in my office or else in our Homework Box. You may speak to your classmates and others (and me) about these problems, but your write-up should be your own. Show your work!

Determine whether each of the following sequences is bounded, monotone and convergent or divergent. If it is convergent, determine its limit. If it is divergent, indicate whether or not it diverges to $\pm\infty$.

1. $\{2n - 1\}$
2. $\left\{\frac{\cos n}{n}\right\}$
3. $\{(-2)^n\}$
4. $\left\{\frac{n^2}{1-4n^2}\right\}$

Express this infinite series in the form $\sum_{n=1}^{\infty} a_n$. Then determine the sum of the series.

$$6 - 2 + \frac{2}{3} - \frac{2}{9} + \frac{2}{27} - \cdots$$

Do Schaum, p. 392, 35.

Do Schaum, p. 399, 16b, 17b