

- Page 1: As we will see,

$$\ln(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} - \dots$$

- Page 2, Example 1: the starting values of  $a_1 = 0$  and  $a_2 = 1$ .
- Page 3: Footnote  $\lim_{x \rightarrow b} g(x) = g(b)$ ,  
Fig. 1.5:  $n > 7$ .
- Page 6: “From the special limits in the Appendix” should read “From the special limits in Theorem 1.2”
- Page 7: Reference to Appendix should be reference to Problem 7.
- Page 9, Example 1;12: Series should be  $\sum_{n=1}^{\infty} \frac{1}{3n^2-n}$   
series needs to have terms satisfying  $\frac{1}{3n^2-n} \leq c_n$  for  $n \geq N$  for some  $N$ . Since  $3n^2 - n > n^2$  for  $N \geq 1$ , we can compare the series  $\sum_{n=1}^{\infty} \frac{1}{n^2}$  with the given series. Namely,

$$\sum_{n=1}^{\infty} \frac{1}{3n^2-n} \leq \sum_{n=1}^{\infty} \frac{1}{n^2}.$$

If we can show that  $\sum_{n=1}^{\infty} \frac{1}{n^2}$  converges, then we can say that the infinite series  $\sum_{n=1}^{\infty} \frac{1}{3n^2-n}$  converges by the Comparison Test. We will later show that this is indeed the case. In Figure 1.7 we plot the partial sums,  $s_k = \sum_{n=1}^k \frac{1}{n^2}$ . It is clear from the figure that the series converges.

Figure 1.7 caption: Plot of the partial sums  $s_k = \sum_{n=1}^k \frac{1}{n^2}$ .

- Page 18: Ex 1.28.  $\sum_{n=1}^{\infty} M_n = \sum_{n=1}^{\infty} \frac{1}{n^2} \leq \infty$ .
- Page 38: Problem 10a,  $\sum_{n=1}^{\infty} \frac{1}{n!} = 1 + \frac{1}{2!} + \frac{1}{3!} + \frac{1}{4!} + \dots$ .