

Solutions

Each answer shows the steps, then the **result**.

2.1

- $|S - S_N| \leq b_{N+1}$ (the first omitted term)

2.2

- Error $\leq b_6 = \frac{1}{6} \approx 0.167$

2.3

- Error $\leq b_3 = \frac{1}{9} \approx 0.111$

3.1 B

- the error is at most the first omitted term b_{N+1}

3.2

(a)

- $b_4 = \frac{1}{4^3} = \frac{1}{64}$

(b)

- Error $\leq \frac{1}{64} \approx 0.0156$

3.3

- Need $b_{N+1} = \frac{1}{N+1} < 0.05$; $N + 1 > 20$, so $N \geq 20$; take 20 terms