

Quiz 19, March 15, 2016

Does the series $\sum_{n=1}^{\infty} \frac{n}{n+1}$ converge? Justify your answer.

Answer: We apply the Individual Term Test for Divergence. We compute

$$\lim_{n \rightarrow \infty} \text{the } n^{\text{th}} \text{ term} = \lim_{n \rightarrow \infty} \frac{n}{n+1} = \lim_{n \rightarrow \infty} \frac{1}{1 + \frac{1}{n}} = 1,$$

which is not zero. We conclude that

$\sum_{n=1}^{\infty} \frac{n}{n+1} \text{ diverges by the Individual Term Test for Divergence.}$
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