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Quiz 13 - Math 152

For each sequence $\{a_n\}$, say whether the infinite sum

$$\sum_{n=1}^{\infty} a_n$$

is convergent or divergent.

a_n	$\sum_{n=1}^{\infty} a_n$ convergent or divergent?
$\frac{1}{n}$	divergent (integral test)
$e^{-\frac{n}{1000}}$	convergent (integral test)
$\begin{cases} n^5 & 1 \le n \le 10,000 \\ \frac{1}{n^5} & n > 10,000 \end{cases}$	convergent (integral test)
$4\left(\frac{3}{5}\right)^n$	convergent (geometric series, $r = \frac{3}{5}$
$\frac{\ln n}{n^2}$	convergent (integral test)