Use either the Integral Test or the Standard Comparison Test or the Limit Comparison Test to explain why the series

\[
\sum_{n=1}^{\infty} \frac{2}{n+1}
\]

diverges.

**Solution:** Note that for all integers \( n \geq 1 \) we have

\[
\frac{2}{n+1} > \frac{2}{n+n} = \frac{2}{2n} = \frac{1}{n}.
\]

Since

\[
0 < \frac{1}{n} < \frac{2}{n+1}
\]

for all \( n \geq 1 \) and since the series

\[
\sum_{n=1}^{\infty} \frac{1}{n}
\]

diverges (because it is the harmonic series), then the series

\[
\sum_{n=1}^{\infty} \frac{2}{n+1}
\]

also diverges by the Standard Comparison Test.