PRINT Your Name:_____

Remove everything from your desk except this page and a pencil or pen.

Circle your answer. **Show your work.**
The quiz is worth 5 points.

Does the series $\sum_{k=1}^{\infty} \frac{2+(-1)^k}{5^k}$ converge? **Justify your answer very thoroughly.**

Answer: Compare the given series to the convergent geometric series $\sum_{k=1}^{\infty} \frac{3}{5^k}$.

Both series are positive series. We see that $\frac{2+(-1)^k}{5^k} \leq \frac{3}{5^k}$. We conclude that

$$\boxed{\sum_{k=1}^{\infty} \frac{2+(-1)^k}{5^k} \text{ converges.}}$$