

PRINT Your Name: _____

Quiz 12 — November 13, 2009 – 9:05 section

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 $\sum_{k=1}^{\infty} \frac{4+|\cos k|}{k^3}$ converge? **Justify your answer very thoroughly.**

Answer: Compare the given series to the convergent p-series $5 \sum_{k=1}^{\infty} \frac{1}{k^3}$. Both series are positive series. We see that $\frac{4+|\cos k|}{k^3} \leq \frac{5}{k^3}$. We conclude that

$$\sum_{k=1}^{\infty} \frac{4+|\cos k|}{k^3} \text{ converges.}$$