In my heart of calculus hearts, I think that $\sum_{k=5}^{\infty} \frac{3}{42+k}$

(a) Converges

(b) Diverges

(c) I don't have strong feelings about this series

I can test for the convergence or divergence of $\sum_{k=5}^{\infty} \frac{3}{42+k}$ using

(a) The nth Term Test

(b) The p-test

(c) Direct Comparison Test

(d) Limit Comparison Test

(e) Integral Test

In my heart of calculus hearts, I think that $\sum_{j=2}^{\infty} \frac{j^2}{4^j}$

(a) Converges

(b) Diverges

(c) I don't have strong feelings about this series

Using the Limit Comparison Test to compare

$$\sum_{j=2}^{\infty} \frac{j^2}{4^j} \quad \text{and} \quad \sum \frac{1}{4^j}$$

tells me that

(a) $\sum_{j=2}^{\infty} \frac{j^2}{4^j}$ converges

(b) $\sum_{j=2}^{\infty} \frac{j^2}{4^j}$ diverges

(c) Nothing about $\sum_{j=2}^{\infty} \frac{j^2}{4^j}$

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