

I will change it stfu

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$$\sum_{n=1}^{\infty} \frac{n!}{(kn)!} \text{ is convergent if } \lim_{n \rightarrow \infty} \frac{(n+1)!}{(k(n+1))!} \cdot \frac{(kn)!}{n!} = 0$$
$$\lim_{n \rightarrow \infty} \frac{(n+1)!}{(k(n+1))!} \cdot \frac{(kn)!}{n!} = \lim_{n \rightarrow \infty} \frac{(n+1)(kn)!}{(k(n+1))!}$$

And because I am the biggest idiot in the world I forgot about L'Hospital's rule.