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MATH 450 Seminar in Proof

$\mathbf{0.\bar{9} = 1}$

Proof. We know that:

$$\begin{aligned}
0.9 &= \frac{9}{10} + \frac{9}{100} + \frac{9}{1000} + \frac{9}{100000} + ... \\
&= 9(\frac{1}{10} + \frac{1}{100} + \frac{1}{1000} + \frac{1}{100000} + ...) \\
&= 9\sum_{n=1}^{\infty} \frac{1}{10^n} \\
&= 9(\frac{\frac{1}{10}}{1 - \frac{1}{10}}) \\
&= 9(\frac{\frac{1}{10}}{\frac{9}{10}}) \\
&= 1
\end{aligned}$$

Why does this converge?

Use \left and \right before the parentheses to make them bigger

The spacing is really awkward here

Thus proved.

□

This is obviously mostly fine. But I think we can agree that you really didn't *push* yourself on this one. Not that much room for growth.