

### Problem 3: Find the Limit

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Find the limit of the sequence  $a_n = \frac{n}{(n!)^{\frac{1}{n}}}$  as  $n \rightarrow \infty$ .

(Hint: Recall the connection between the ratio test and the root test.)

As always, show your work, fully explain and justify your answer. A solution mainly obtained by computers or calculators will not be accepted.

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Posting Date 2/9/2018. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by 4 pm on 2/21/18.