wage rate offers. The problem is to determine how long (i.e., how many searches) the person should spend in looking.

Assume that each search (i.e. each wage rate offer encountered) is an independent random variable from the known distribution of wage rate offers. Also assume that previous wage rate offers remain open to the person and that the cost of making one additional search is a constant.

This example is conceptually similar to that of the consumer example. It can be verified that there is again an optimal number of searches to make. It is, however, more realistic to assume that the person will take into consideration the wage rate offers that he has already encountered in deciding whether to make an additional search. It can also be verified that a better rule is to select a wage rate R and accept the first job paying at least R.

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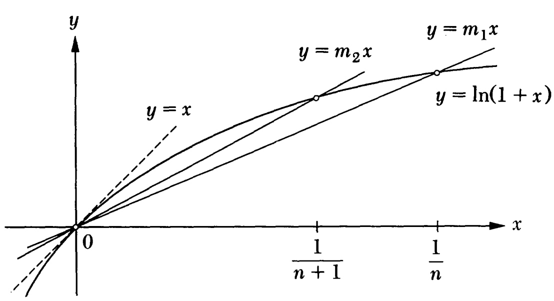
Proof without Words: A Monotone Sequence Bounded by *e*

$$\forall n \geq 1, \left(1+\frac{1}{n}\right)^n < \left(1+\frac{1}{n+1}\right)^{n+1} < e.$$



$$n \geq 1 \Rightarrow m_1 < m_2 < 1$$

$$\Rightarrow \frac{\ln\left(1+\frac{1}{n}\right)}{\frac{1}{n}} < \frac{\ln\left(1+\frac{1}{n+1}\right)}{\frac{1}{n+1}} < 1$$

$$\Rightarrow \left(1+\frac{1}{n}\right)^n < \left(1+\frac{1}{n+1}\right)^{n+1} < e$$

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