1. Describe an appropriate reduction to show that the following function is not computable, where P is any program that takes exactly one input x. Don't forget to argue that your reduction is correct!

 $allstop(P) = \begin{cases} True & if P(x) halts for every input x, \\ False & otherwise. \end{cases}$

2. Describe an appropriate reduction to show that the following function is not computable, where P is any program that takes exactly one input x. Don't forget to argue that your reduction is correct!

steps(P,x) = $\begin{cases} \text{the number of lines of code executed by P on input x,} & \text{if P(x) halts,} \\ 0 & \text{otherwise.} \end{cases}$