QUIZ 1
You have 25 minutes.
No notes, no books.
YOU MUST SHOW ALL WORK TO RECEIVE CREDIT
Good luck!

Name ____________________________

1. ___________ (/20 points)

2. ___________ (/20 points)

Total ___________ (/40 points)
1. a) Prove that the function $f(x) = \sin x e^{\tan x} + 4$ is an antiderivative for the function $g(x) = \cos x e^{\tan x} + \sec x \tan x e^{\tan x}$.

b) Find all antiderivatives for $f(x) = xe^x + e^x$ and $g(x) = 2x \sin(x^2)$. 
2. a) For $a > 1$, use geometry to find $g(a)$, which is the area under the graph $y = 2x + 1$ between the lines $x = 1$ and $x = a$. What is $g'(a)$?

b) Give an expression as a limit for the area under the curve $y = e^x$ between the lines $x = 3$ and $x = 4$. 