Math 152 Quiz #4 Answers

1. Using disks of radius $r = \frac{1}{y}$, $\quad$ Volume $= \displaystyle\int_1^2 \pi(\frac{1}{y})^2\,dy \;=\; \frac{\pi}{2}$ cubic units

2. The cross-sections will have area $= (e^x)^2 = e^{2x}$. $\quad\Rightarrow\quad$ Volume $= \displaystyle\int_0^1 e^{2x}\,dx \;=\; \frac{1}{2}(e^2 - 1)$ cubic units

(Using substitution to evaluate the integral.)