Parametric Surfaces

Question

The figure shows a surface obtained by revolving the curve $y = e^x$ for $0 \leq x \leq 1$ in the xy-plane about the y-axis. Which of the following could *not* be a parametrization of this surface?

A. $x\cos(\theta)\vec{i} + e^x\vec{j} + x\sin(\theta)\vec{k}$

B. $\ln(y)\cos(\theta)\vec{i} + y\vec{j} + \ln(y)\sin(\theta)\vec{k}$

C. $x\cos(\theta)\vec{i} + e^x\vec{j} + e^x\sin(\theta)\vec{k}$