For each curve $C$,

(a) Set up the integral that gives the arc length of $C$

(b) Approximate the length of the curve $C$ within $0.001$ of its actual value

1. $C$ is the graph of $y = \ln(x)$ from $x = 1$ to $x = 8$
2. $C$ is the graph of $y = \sin(x)$ from $x = 0$ to $x = \pi$
3. $C$ is the graph of $y = \sqrt{16 - x^2}$ from $x = 0$ to $x = 4$