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 $x = 4$