

1. Find the length of the curve $y = x^2 - \frac{1}{8} \ln x$ for $1 \leq x \leq 3$.
2. Set up an integral to find the arc length of $f(x) = e^{2x}$ from $x = -2$ to $x = 3$.
3. Find the arc length of the curve $y = \ln(\sec(x))$ for $0 \leq x \leq \frac{\pi}{4}$.
4. Set up and simplify an integral for the length of the curve $y = \frac{x^4}{16} + \frac{1}{2x^2}$, $1 \leq x \leq 2$.
5. Find the length of the curve $x = \frac{y^4}{8} + \frac{1}{4y^2}$, $1 \leq y \leq 2$.
6. Find the arc length of the curve $f(t) = 5 + t^{3/2}$ for $0 \leq t \leq 1$.
7. Set up, but do not evaluate, an integral to find the arc length of $xy = 2$ from $(1, 2)$ to $(2, 1)$.
8. Set up, but do not evaluate, an integral to find the arc length of $y = \frac{1}{x}$ for $1 \leq x \leq 5$.
9. Find the length of the curve $y = \ln(\cos x)$, $0 \leq x \leq \pi/3$.
10. Find the length of the curve $y = \frac{x^2}{4} - \frac{1}{2} \ln x$, $1 \leq x \leq 2$.