Arc Length

1. Use the arc length formula to calculate the arc length of $f(x) = 1 + 3x$ from $x = 1$ to $x = 2$. Explain why your answer is comforting. It's probably easiest if you resist the urge to convert any square roots you might encounter into decimals.

2. Let $f(x) = x^2$. How long is the curve from $x = 0$ to $x = 1$?

3. Let $f(x) = x^3$. How long is the curve from $x = 0$ to $x = 1$?

4. Let $f(x) = \sin(x)$. How long is the curve from $x = 0$ to $x = \pi$?