

Example 1. Use the arc length formula to find the length of the curve $y = 3x - 5$ when $1 \leq x \leq 3$. Check your answer by Pythagorean Theorem.

Example 2. Use the arc length formula to find the length of the curve $y = 2x^{3/2} - 3$, for $1 \leq x \leq 4$.

Example 3. Use the arc length formula to find the length of the curve $y = 2(x - 3)^{3/2}$, for $3 \leq x \leq 4$.

Example 4. Use the arc length formula to find the length of the curve $y^3 = x^2$, for $1 \leq y \leq 4$.

Example 5. Find the arc length function for the curve $y = \frac{1}{4}x^2 - \frac{1}{2} \ln x$ taking $(1, 1/4)$ as the starting point.