

Choose the correct answer

Use the substitution $u = \sqrt{x}$ to rewrite $\int_0^\pi \cos(\sqrt{x}) dx$

a) $\int_0^\pi \cos u du$ b) $\int_0^{\sqrt{\pi}} 2u \cos u du$ c) $\int_0^\pi \frac{1}{2} u \cos u du$

d) $\int_0^\pi 2u \cos u du$ e) $\int_0^{\sqrt{\pi}} u \cos u du$

$$1. \int \frac{2x}{x^2 - 9} dx$$

$$2. \int \frac{1 dx}{25 + 4x^2}$$

$$3. \int \sin x \cos^3 x$$

$$4. \int \frac{\ln(x)}{x^2} dx$$

$$5. \int x^2 \cos(3x) dx$$

$$6. \frac{dy}{dx} = 3(y - 1) \quad y(2) = 0$$

$$7. \int \frac{1}{x^2 + x - 6} dx$$