

Student Name: _____

Score: _____

Integration using Substitution

Integrate the following w.r.t. x

$$\int \frac{\cos(\tan^{-1} x)}{1+x^2} dx$$

$$\int \sec^2 x \sqrt{\tan x} dx$$

$$\int \frac{2\sqrt{\ln(x)}}{x} dx$$

$$\int 7 \cos x e^{14 \sin x} dx$$

$$\int \frac{\sec^2 x}{8\sqrt{\tan x}} dx$$

$$\int \frac{1}{2 \sec x \tan x \cos x} dx$$

$$\int \frac{-\csc^2 x}{3 \cot x} dx$$

$$\int 2x \sqrt{7+x^2} dx$$

$$\int \frac{15x^2}{5x^3+3} dx$$

$$\int \frac{\sin^{-1} x}{5\sqrt{1-x^2}} dx$$

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Integration using Substitution

Integrate the following w.r.t.x

$$\int \frac{12x^3}{\sqrt{3x^4 + 5}} dx$$

$$\int \tan x \sec^2 x dx$$

$$\int \cos x \sin^7 x dx$$

$$\int \frac{7e^x}{2 + e^x} dx$$

$$\int \sin^3 x \cot x dx$$

$$\int \frac{5e^{5\ln(|x|)}}{x} dx$$

$$\int (5x^4 - 3)(1 - x^5 + 3x) dx$$

$$\int x(3 - x)^9 dx$$

$$\int 9x^8 e^{x^9} dx$$

$$\int \frac{\sin x}{\sqrt{1 - \cos x}} dx$$