

Integration by Substitution ... Set 2

Integration by Substitution

Evaluate each indefinite integral.

$$1) \int \frac{2x}{(x^2 + 5)^4} dx$$

$$2) \int 15x^4 \sqrt{3x^5 + 5} dx$$

$$3) \int (x^3 - 2)^{-4} \cdot 3x^2 dx$$

$$4) \int 15x^2 \sqrt{5x^3 - 2} dx$$

$$5) \int \frac{6x}{(3x^2 + 2)^3} dx$$

$$6) \int \frac{40x^3}{(5x^4 + 3)^4} dx$$

$$7) \int (3x^4 - 5)^5 \cdot 36x^3 dx$$

$$8) \int 8x(2x^2 - 3)^4 dx$$

$$9) \int 18x \sqrt{3x^2 + 5} dx$$

$$10) \int 10x \sqrt[3]{x^2 - 3} dx$$

$$11) \int 125x^4 \sec(5x^5 - 4) \cdot \tan(5x^5 - 4) dx$$

$$12) \int 100x^4 \cdot \sec^2(5x^5 - 4) dx$$

$$13) \int -16x \sec(2x^2 - 3) \cdot \tan(2x^2 - 3) dx$$

$$14) \int 3 \cdot \csc^2 3x \sec(\cot 3x) \cdot \tan(\cot 3x) dx$$

$$15) \int 36x^2 \tan(4x^3 - 5) dx$$

$$16) \int \frac{20x^4}{9 + 16x^{10}} dx$$

$$17) \int \frac{25x^4}{\sqrt{25 - 25x^{10}}} dx$$

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Answers

Integration by Substitution

$$1) -\frac{1}{3(x^2 + 5)^3} + C$$

$$2) \frac{2}{3}(3x^5 + 5)^{\frac{3}{2}} + C$$

$$3) -\frac{1}{3(x^3 - 2)^3} + C$$

$$4) \frac{2}{3}(5x^3 - 2)^{\frac{3}{2}} + C$$

$$5) -\frac{1}{2(3x^2 + 2)^2} + C$$

$$6) -\frac{2}{3(5x^4 + 3)^3} + C$$

$$7) \frac{1}{2}(3x^4 - 5)^6 + C$$

$$8) \frac{2}{5}(2x^2 - 3)^5 + C$$

$$9) 2(3x^2 + 5)^{\frac{3}{2}} + C$$

$$10) \frac{15}{4}(x^2 - 3)^{\frac{4}{3}} + C$$

$$11) 5\sec(5x^5 - 4) + C$$

$$12) 4\tan(5x^5 - 4) + C$$

$$13) -4\sec(2x^2 - 3) + C$$

$$14) -\sec(\cot 3x) + C$$

$$15) 3\ln |\sec(4x^3 - 5)| + C$$

$$16) \frac{1}{3} \cdot \tan^{-1} \frac{4x^5}{3} + C$$

$$17) \sin^{-1} \frac{5x^5}{5} + C$$