University of Caloocan City

College of Liberal Arts & Sciences

Mathematics Department

Integral Calculus: Practice Problems

Topic	**METHODS OF INTEGRATION**
Integration By Parts	Evaluate each of the following indefinite integrals using Integration by Parts 1. $\int x^6 cos3x\ dx$ 2. $\int e^{2x} cos\frac{1}{4}x\ dx$ 3. $\int e^{\frac{1}{3}x}(5x+2)dx$ 4. $\int x^7 sin2x^4 dx$ 5. $\int 6Arctan\frac{8}{x}dx$
Algebraic Substitution	Evaluate each of the following indefinite integrals using Algebraic Substitution 1. $\int \frac{(8x+1)}{\sqrt{4x-3}}dx$ 2. $\int x^3\sqrt{2x^2+1}\,dx$ 3. $\int \frac{x^3}{(x^2+1)^3}dx$ 4. $\int \frac{x}{\sqrt[4]{2x+1}}dx$

	5. $\int \frac{(6x-1)}{(2x+1)^{3/2}}\,dx$
Trigonometric Substitution	Evaluate each of the following indefinite integrals using Algebraic Substitution 1. $\int \frac{\sqrt{x^{2+16}}}{x^4}\,dx$ 2. $\int x^3(3x^2-4)^{5/2}\,dx$ 3. $\int \frac{2}{x^4\sqrt{x^2-25}}\,dx$ 4. $\int 2x^5\sqrt{9x^2+2}\,dx$ 5. $\int \frac{(x+3)^5}{(40-6x-x^2)^{3/2}}\,dx$