DIRECCIÓN GENERAL DE EDUCACIÓN TECNOLÓGICA INDUSTRIAL Y DE SERVICIOS

Dirección General de Educación Tecnológica Industrial y de Servicios No.166

Centro de Estudios Tecnológicos Industrial y de Servicios No.166

"Carmen Serdán Alatriste"

Ciclo Escolar 2022 – 2023 / 2

Guía de Estudios del Turno Matutino

CALCULO INTEGRAL

Elaboro: Prof. (a):

Alumno: _____

Grupo: _____ **No. de control:** _____

GUIA CALCULO INTEGRAL.

$\int 9dx =$	$\int 2x^5 dx =$	$\int (6x^5 - 10x^2 + 8x)dx =$
$\int 2dx =$	$\int x^{10} dx =$	$\int (2x^7 - 4x^3 + 11x)dx =$
$\int 50dx =$	$\int 8x^{40} dx =$	$\int (23x^5 - 41x^2 + 17)dx =$
$\int \frac{3}{4} dx =$	$\int 12x^{11} dx =$	$\int (5x^8 + 4x^3 + x)dx =$
$\int -7dx =$	$\int 6x^5 dx =$	$\int (x^4 - 4x^7 + x)dx =$

$\int \frac{1}{4}x^2 dx =$	$\int \sqrt[7]{x^2}\, dx =$	$\int \frac{9}{x^3}\, dx =$	$\int \frac{2}{3\sqrt[7]{x^3}} =$
$\int \frac{3}{4}x^3 dx =$	$\int \sqrt[5]{x^4}\, dx =$	$\int \frac{7}{x^4}\, dx =$	$\int \frac{9}{2\sqrt[5]{x^3}} =$
$\int \frac{3}{7}x^2 dx =$	$\int \sqrt[9]{x^2}\, dx =$	$\int \frac{5}{x^8}\, dx =$	$\int \frac{9}{2\sqrt[7]{x^2}} =$

Integrales definidas.

$\int_4^7 (8x^2 - 7x + 20)dx =$	$\int_2^5 (2 - 4x)dx =$	$\int_0^3 11dx =$
$\int_1^3 (9x^2 + 15x + 7)dx =$	$\int_{-2}^3 (10x + 1)dx =$	$\int_{-2}^2 30dx =$
$\int_0^5 (7x^2 - 10x + 13)dx =$	$\int_2^9 (2x^3 - 1)dx =$	$\int_3^5 18dx =$
$\int_{-2}^2 (-5x + 2)dx =$	$\int_2^3 (2x + 12)dx =$	$\int_0^2 3x^4 dx =$

$\int_1^4 (3x^4 - 5x^3 + 2x - 7)dx =$	$\int_2^3 (7x - 5)dx =$	$\int_2^4 5x^3 dx =$

Resolver las siguientes áreas bajo la curva:

1.- $Y = 2x^2 \quad con\ x_1 = 1, x_2 = 2$

2.- $Y = -3x^2 + 2 \quad con\ x_1 = 0, x_2 = 3$

3.- $Y = 12 \quad con\ x_1 = 1, x_2 = 5$

4.- $Y = 8 \quad con\ x_1 = -1, x_2 = 3$

5.- $Y = 3x + 1 \quad con\ x_1 = 2, x_2 = 7$

Integrales indefinidas de polinomios.

$\int (8X + 3)dx =$	$\int (6X + 3)7x^2 dx =$	$\int (7x + 4)^2 dx =$	$\int (6x + 73)^{14} dx =$
$\int (4X + 5)dx =$	$\int (9X + 30)6x^2 dx =$	$\int (8x - 12)^2 dx =$	$\int (8x + 3)^{20} dx =$
$\int (4X - 3)dx =$	$\int (10X + 8)2x^2 dx =$	$\int (40x + 34)^2 dx =$	$\int (4x + 15)^{20} dx =$
$\int (7X - 10)dx =$	$\int (4X + 3)5x^3 dx =$	$\int (19 - 3x)^2 dx =$	$\int (4x + 3)^8 dx =$

$\int (4x + 3)^{20}\ 5\ dx =$	$\int (4x^2 + 3)^{20}\ x\ dx =$	$\int (8x + 3)^2 x dx =$	$\int (2x + 8)\ (4x - 11)dx =$

$\int (8x+3)^{20}\ 10\ dx =$	$\int (12x^2+3)^2\ 3x\ dx =$	$\int (4x-10)^2 x dx =$	$\int (4x+3)\,(2x+1) dx =$
$\int (4x+9)^{20}\ 9\ dx =$	$\int (4x^2+15)^{10}\ 4x\ dx =$	$\int (9x+29)^2 x dx =$	$\int (4x-3)\,(2x-1) dx =$
$\int (4x-3)^{20}\ 12\ dx =$	$\int (21x^3+3)^{21}\ 3x^2\ dx =$	$\int (2x+1)^2 x dx =$	$\int (8x-5)\,(20x+4) dx =$
$\int (6x+17)^5\ 2\ dx =$	$\int (4x^4+3)^{32}\ 3x^3\ dx =$	$\int (4x+3)^2 2x dx =$	$\int (40x+9)\,(9x-10) dx =$

Integrales indefinidas con división.

$\int \frac{16x^5+4x^4-12x^7}{4x^3} dx =$	$\int \frac{dx}{(2x-7)^8} =$	$\int \frac{dx}{\sqrt[9]{(10x-8)^5}} =$
$\int \frac{4x^8+8x^6-2x^{10}}{4x^4} dx =$	$\int \frac{dx}{(4x+7)^{15}} =$	$\int \frac{dx}{\sqrt[7]{(15x+2)^3}} =$
$\int \frac{2x^{15}+10x^{40}-3x^8}{2x^8} dx =$	$\int \frac{dx}{(10x-7)^2} =$	$\int \frac{dx}{\sqrt[7]{(17x-11)^4}} =$
$\int \frac{15x^5+45x^4-60x^7}{30x^4} dx =$	$\int \frac{dx}{(4-7x)^3} =$	$\int \frac{dx}{\sqrt[3]{(2x+72)^2}} =$

Utilizando du/u

$\int \frac{dx}{7x-2} =$	$\int \frac{4x^3 dx}{5x^4-2} =$	$\int \frac{6x+6}{3x^2+6x-23} dx =$

$\int \frac{dx}{8x+13} =$	$\int \frac{10x^2 dx}{11-2x^3} =$	$\int \frac{24x^2-9}{8x^3-9x-4} dx =$
$\int \frac{dx}{3-4x} =$	$\int \frac{3x dx}{2x^2+3} =$	$\int \frac{20x^4+11}{4x^5+11x+15} dx =$
$\int \frac{dx}{10-12x} =$	$\int \frac{5x^3 dx}{8-3x^4} =$	$\int \frac{10x+13}{5x^2+13x-2} dx =$

Integrales trigonométricas Directas.

$\int \boldsymbol{sen}\, 2x\, dx =$	$\int \boldsymbol{cos}\, 2x\, dx =$	$\int \boldsymbol{sec^2}\, 48x\, dx =$	$\int \boldsymbol{csc^2}\, 10x\, dx =$	$\int \boldsymbol{sec\, 5x\ tan\, 5x}\, dx =$
$\int \boldsymbol{sen}\, 3x\, dx =$	$\int \boldsymbol{cos}\, 8x\, dx =$	$\int \boldsymbol{sec^2}\, 43x\, dx =$	$\int \boldsymbol{csc^2}\, 20x\, dx =$	$\int \boldsymbol{sec\, 8x\ tan\, 8x}\, dx =$
$\int \boldsymbol{sen}\, 11x\, dx =$	$\int \boldsymbol{cos}\, 12x\, dx =$	$\int \boldsymbol{sec^2}\, 38x\, dx =$	$\int \boldsymbol{csc^2}\, 30x\, dx =$	$\int \boldsymbol{sec\, 3x\ tan\, 3x}\, dx =$
$\int \boldsymbol{sen}\, 13x\, dx =$	$\int \boldsymbol{cos}\, 16x\, dx =$	$\int \boldsymbol{sec^2}\, 33x\, dx =$	$\int \boldsymbol{csc^2}\, 40x\, dx =$	$\int \boldsymbol{sec\, 9x\ tan\, 9x}\, dx =$
$\int \boldsymbol{sen}\, 17x\, dx =$	$\int \boldsymbol{cos}\, 20x\, dx =$	$\int \boldsymbol{sec^2}\, 28x\, dx =$	$\int \boldsymbol{csc^2}\, 50x\, dx =$	$\int \boldsymbol{sec\, 4x\ tan\, 4x}\, dx =$

$\int \boldsymbol{csc}\,\boldsymbol{8x}\ \boldsymbol{cot}\,\boldsymbol{8x}\,dx =$	$\int \boldsymbol{csc}\,\boldsymbol{29}x\,dx =$	$\int \boldsymbol{sec}\,2x\,dx =$	$\int \boldsymbol{cot}\,3x\,dx =$	$\int \boldsymbol{tan}\,7x\,dx =$
$\int \boldsymbol{csc}\,\boldsymbol{2x}\ \boldsymbol{cot}\,\boldsymbol{2x}\,dx =$	$\int \boldsymbol{csc}\,\boldsymbol{92}x\,dx =$	$\int \boldsymbol{sec}\,4x\,dx =$	$\int \boldsymbol{cot}\,6x\,dx =$	$\int \boldsymbol{tan}\,14x\,dx =$
$\int \boldsymbol{csc}\,\boldsymbol{9x}\ \boldsymbol{cot}\,\boldsymbol{9x}\,dx =$	$\int \boldsymbol{csc}\,\boldsymbol{96}x\,dx =$	$\int \boldsymbol{sec}\,6x\,dx =$	$\int \boldsymbol{cot}\,9x\,dx =$	$\int \boldsymbol{tan}\,21x\,dx =$
$\int \boldsymbol{csc}\,\boldsymbol{5x}\ \boldsymbol{cot}\,\boldsymbol{5x}\,dx =$	$\int \boldsymbol{csc}\,15x\,dx =$	$\int \boldsymbol{sec}\,8x\,dx =$	$\int \boldsymbol{cot}\,12x\,dx =$	$\int \boldsymbol{tan}\,28x\,dx =$

Integrales trigonométricas recíprocas.

$\int \frac{\boldsymbol{dx}}{\sqrt{\boldsymbol{81-25x^2}}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{121x^2+9}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{4x\sqrt{16x^2-9}}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{841-100x^2}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{x^2-2}} =$	$\int \frac{\boldsymbol{dx}}{\sqrt{\boldsymbol{4x^2-1}}} =$
$\int \frac{\boldsymbol{dx}}{\sqrt{\boldsymbol{16-49x^2}}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{4x^2+13}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{3x\sqrt{9x^2-25}}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{729-784x^2}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{9x^2-4}} =$	$\int \frac{\boldsymbol{dx}}{\sqrt{\boldsymbol{x^2-16}}} =$
$\int \frac{\boldsymbol{dx}}{\sqrt{\boldsymbol{25-121x^2}}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{196x^2+4}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{x\sqrt{x^2-121}}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{169-9x^2}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{16x^2-9}} =$	$\int \frac{\boldsymbol{dx}}{\sqrt{\boldsymbol{9x^2-4}}} =$
$\int \frac{\boldsymbol{dx}}{\sqrt{\boldsymbol{49-144x^2}}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{225x^2+16}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{6x\sqrt{36x^2-16}}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{144-10x^2}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{25x^2-1}} =$	$\int \frac{\boldsymbol{dx}}{\sqrt{\boldsymbol{49x^2-25}}} =$
$\int \frac{\boldsymbol{dx}}{\sqrt{\boldsymbol{100-225x^2}}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{100x^2+25}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{7x\sqrt{49x^2-4}}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{81-x^2}} =$	$\int \frac{\boldsymbol{dx}}{\boldsymbol{36x^2-25}} =$	$\int \frac{\boldsymbol{dx}}{\sqrt{\boldsymbol{36x^2-81}}} =$

Integrales logarítmicas y exponenciales.

$\int e^{-5x}dx =$	$\int e^{2x^3+7}\,6\,x^2\,dx =$	$\int (e^{16x} - 17x^{10} - 11)\,dx =$	$\int (13e^{2x} + 2)^2 dx =$
$\int e^{7x/2}dx =$	$\int e^{5x^4-8}\,x^3\,dx =$	$\int (e^{23x} + 42)\,dx =$	$\int (9e^{37x} - 14)^2 dx =$
$\int e^{x/50}dx =$	$\int e^{3x^5-9}\,2x^4\,dx =$	$\int (\frac{3}{4}x + e^{-4x})\,dx =$	$\int (5e^{76x} - 17)^2 dx =$
$\int e^{x/5}dx =$	$\int e^{4x^6+11}\,12\,x^5\,dx =$	$\int (\frac{1}{2}x - e^{-5x/3})\,dx =$	$\int (16e^{200x} - 3)^2 dx =$

$\int \frac{5dx}{e^{3x}} =$	$\int e^{\tan 4x} sec^2 4x\,dx =$	$\int 5^x dx =$	$\int 8^{4x^2} 8x dx =$
$\int \frac{15dx}{e^{8x}} =$	$\int e^{\tan 5x} sec^2 5x\,dx =$	$\int 12^{3x} dx =$	$\int 2^{5x^2} 10x dx =$
$\int \frac{11dx}{e^{9x}} =$	$\int e^{\cot 12x} csc^2 12x\,dx =$	$\int 2^{8x} dx =$	$\int 3^{5x^2} x dx =$
$\int \frac{19dx}{e^{12x}} =$	$\int e^{\cot 8x} csc^2 8x\,dx =$	$\int 3^{10x} dx =$	$\int 9^{10x^2} x dx =$

Integrales utilizando integración por partes.

$\int 10x\ sen8x\ dx =$	$\int 11x\ csc^2\ 7x\,dx =$	$\int 15xe^{8x} dx =$	$\int 18x\sqrt{9x+8}\ dx$
$\int 9x\ cos11x\ dx =$	$\int 15x\ sec^2\ 2x\,dx =$	$\int 9xe^{100x} dx =$	$\int 15x\sqrt{14-3x}\ dx$

$\int 14x\ cos7x\ dx =$	$\int 17x\ c\,sc^2\ 4x\,dx =$	$\int 24xe^{13x}dx =$	$\int 8x\sqrt{11x+7}\ dx$
$\int 20x\ sen45x\ dx =$	$\int 21x\ sec^2\ 20x\,dx =$	$\int 36xe^{62x}dx =$	$\int 3x\sqrt{8-5x}\ dx$
$\int 42x\ sen16x\ dx =$	$\int 27x\ csc^2\ 40x\,dx =$	$\int 42xe^{81x}dx =$	$\int x\sqrt{20x+33}\ dx$

Resolver las integrales trigonométricas.

$\int cos^2 2x\,dx =$	$\int sen^2\ 7x\ cos^2\ 7x\,dx =$	$\int sen^{\,2}\ 3x \cos\ 3x\,dx =$
$\int cos^2 7x\,dx =$	$\int sen^2\ 10x\ cos^2\ 10x\,dx =$	$\int sen^{\,6}\ 6x \cos\ 6x\,dx =$
$\int sen^2 9x\,dx =$	$\int sen^2\ 13x\ cos^2\ 13x\,dx =$	$\int cos^{\,12}\ 9x \operatorname{sen}\ 9x\,dx =$
$\int cos^2 11x\,dx =$	$\int sen^2\ 8x\ cos^2\ 8x\,dx =$	$\int cos^{\,5}\ 12x \operatorname{sen}\ 12x\,dx =$
$\int sen^2 13x\,dx =$	$\int sen^2\ 20x\ cos^2\ 20x\,dx =$	$\int sen^{\,17}\ 15x \cos\ 15x\,dx =$

$\int sen^8 2x \cos 2x\ dx =$	$\int cos^{100} 20x\ sen\ 20x dx =$	$\int tan^5 39x\ sec^2 39x dx =$
$\int sen^{12} 5x \cos 5x\ dx =$	$\int cos^{90} 18x\ sen\ 18x dx =$	$\int tan^{10} 35x\ sec^2 35x dx =$

$\int cot^{8}20x\, sec^{2}20x dx =$	$\int sec^{10}18x\, sec18x tan18x dx =$	$\int csc^{14}19x\, csc19x cot19x dx =$
$\int cot^{10}18x\, sec^{2}18x dx =$	$\int sec^{13}17x\, sec17x tan17x dx =$	$\int csc^{19}17x\, csc17x cot17x dx =$

$\int \frac{1}{sen\ 6x} dx =$	$\int \frac{1}{cos\ 7x} dx =$	$\int \frac{1}{tan5x} dx =$	$\int \frac{1}{cot5x} dx =$
$\int \frac{1}{sen\ 10x} dx =$	$\int \frac{1}{cos\ 11x} dx =$	$\int \frac{1}{tan8x} dx =$	$\int \frac{1}{cot6x} dx =$

$\int \frac{1}{sec\ 7x} dx =$	$\int \frac{1}{csc\ 12x} dx =$	$\int \frac{1}{sen^{2}19x} dx =$	$\int \frac{1}{cos^{2}8x} dx =$
$\int \frac{1}{sec\ 9x} dx =$	$\int \frac{1}{csc\ 16x} dx =$	$\int \frac{1}{sen^{2}17x} dx =$	$\int \frac{1}{cos^{2}13x} dx =$