

## Formulario para Cálculo Diferencial

$$\begin{array}{ll}
 \text{i. } \frac{dc}{dx} = 0 & \text{xiv. } \frac{d(\arcsin v)}{dx} = \frac{1}{\sqrt{1-v^2}} \frac{dv}{dx} \\
 \text{ii. } \frac{dx}{dx} = 1 & \text{xv. } \frac{d(\arccos v)}{dx} = \frac{-1}{\sqrt{1-v^2}} \frac{dv}{dx} \\
 \text{iii. } \frac{d(u+v)}{dx} = \frac{du}{dx} + \frac{dv}{dx} & \text{xvi. } \frac{d(\arctan v)}{dx} = \frac{1}{1+v^2} \frac{dv}{dx} \\
 \text{iv. } \frac{d(c \cdot v)}{dx} = c \frac{dv}{dx} & \text{xvii. } \frac{d(\operatorname{arccot} v)}{dx} = \frac{-1}{1+v^2} \frac{dv}{dx} \\
 \text{v. } \frac{d(u \cdot v)}{dx} = u \frac{dv}{dx} + v \frac{du}{dx} & \text{xviii. } \frac{d(\operatorname{arcsec} v)}{dx} = \frac{1}{v \sqrt{v^2-1}} \frac{dv}{dx} \\
 \text{vi. } \frac{d(v^n)}{dx} = n v^{n-1} \frac{dv}{dx} & \text{xix. } \frac{d(\operatorname{arccsc} v)}{dx} = \frac{-1}{v \sqrt{v^2-1}} \frac{dv}{dx} \\
 \text{vii. } \frac{d}{dx} \left( \frac{u}{v} \right) = \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2} & \text{xx. } \frac{d(\ln v)}{dx} = \frac{1}{v} \frac{dv}{dx} \\
 \text{viii. } \frac{d(\sin v)}{dx} = \cos v \frac{dv}{dx} & \text{xxi. } \frac{d(\log_a v)}{dx} = \frac{\log_a e}{v} \frac{dv}{dx} \\
 \text{ix. } \frac{d(\cos v)}{dx} = -\sin v \frac{dv}{dx} & \text{xxii. } \frac{d(a^v)}{dx} = a^v \ln a \frac{dv}{dx} \\
 \text{x. } \frac{d(\tan v)}{dx} = \sec^2 v \frac{dv}{dx} & \text{xxiii. } \frac{d(e^v)}{dx} = e^v \frac{dv}{dx} \\
 \text{xi. } \frac{d(\cot v)}{dx} = -\csc^2 v \frac{dv}{dx} & \text{xxiv. } \frac{d(u^v)}{dx} = (v \cdot u^{v-1} + \ln u \cdot u^v) \frac{dv}{dx} \\
 \text{xii. } \frac{d(\sec v)}{dx} = \sec v \tan v \frac{dv}{dx} & \text{xxv. } \frac{dy}{dx} = \frac{dy}{dv} \cdot \frac{dv}{dx} \\
 \text{xiii. } \frac{d(\csc v)}{dx} = -\csc v \cot v \frac{dv}{dx} & \text{xxvi. } \frac{dy}{dx} = \frac{1}{\frac{dx}{dy}}
 \end{array}$$

## Formulario para Cálculo Integral

$$\begin{array}{ll}
 \text{i. } \int (dv + dw) = \int dv + \int dw & \text{xvi. } \int \frac{dv}{a^2 + v^2} = \frac{1}{a} \arctan \left( \frac{v}{a} \right) + C \\
 \text{ii. } \int a dv = a \int dv & \text{xvii. } \int \frac{dv}{v^2 - a^2} = \frac{1}{2a} \ln \left( \frac{v-a}{v+a} \right) + C \\
 \text{iii. } \int dx = x + C & \text{xviii. } \int \frac{dv}{\sqrt{a^2 - v^2}} = \arcsin \left( \frac{v}{a} \right) + C \\
 \text{iv. } \int v^n dv = \frac{v^{n+1}}{n+1} + C & \text{xix. } \int \frac{dv}{\sqrt{v^2 \pm a^2}} = \ln \left( v + \sqrt{v^2 \pm a^2} \right) + C \\
 \text{v. } \int \frac{dv}{v} = \ln |v| + C & \text{xx. } \int \sqrt{a^2 - v^2} dv = \frac{v}{2} \sqrt{a^2 - v^2} + \frac{a^2}{2} \arcsin \left( \frac{v}{a} \right) + C \\
 \text{vi. } \int a^v dv = \frac{a^v}{\ln a} + C & \text{xxi. } \int \sqrt{v^2 \pm a^2} dv = \frac{v}{2} \sqrt{v^2 \pm a^2} \pm \frac{a^2}{2} \ln \left( v + \sqrt{v^2 \pm a^2} \right) + C \\
 \text{vii. } \int e^v dv = e^v + C & \text{xxii. } \int u dv = u \cdot v - \int v du \\
 \text{viii. } \int \ln v dv = v \ln v - v + C & \\
 \text{ix. } \int \sin v dv = -\cos v + C & \\
 \text{x. } \int \cos v dv = \sin v + C & \\
 \text{xi. } \int \sec^2 v dv = \tan v + C & \\
 \text{xii. } \int \csc^2 v dv = -\cot v + C & \\
 \text{xiii. } \int \sec v \tan v dv = \sec v + C & \\
 \text{xiv. } \int \sec v dv = \ln (\sec v + \tan v) + C & \\
 \text{xv. } \int \frac{dv}{a^2 - v^2} = \frac{1}{2a} \ln \left( \frac{a+v}{a-v} \right) + C & 
 \end{array}$$

### Sustituciones Trigonómicas

$$\begin{array}{ll}
 \checkmark \sqrt{a^2 - u^2} \rightarrow \text{hágase} & \\
 u = a \sin z \rightarrow a \cos z & \\
 \checkmark \sqrt{a^2 + u^2} \rightarrow \text{hágase} & \\
 u = a \tan z \rightarrow a \sec z & \\
 \checkmark \sqrt{u^2 - a^2} \rightarrow \text{hágase} & \\
 u = a \sec z \rightarrow a \tan z & 
 \end{array}$$

TABLA DE VALORES DE LAS FUNCIONES TRIGONOMÉTRICAS

DEG	0°	30°	37°	45°	53°	60°	90°	120°	135°	150°	180°	210°	225°	240°	270°	300°	315°	330°	360°
RAD	0	$\frac{\pi}{6}$	$\frac{37\pi}{180}$	$\frac{\pi}{4}$	$\frac{53\pi}{180}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2\pi}{3}$	$\frac{3\pi}{4}$	$\frac{5\pi}{6}$	$\pi$	$\frac{7\pi}{6}$	$\frac{5\pi}{4}$	$\frac{4\pi}{3}$	$\frac{3\pi}{2}$	$\frac{5\pi}{3}$	$\frac{7\pi}{4}$	$\frac{11\pi}{6}$	$2\pi$
Sen $\theta$	0	$\frac{1}{2}$	$\frac{3}{5}$	$\frac{\sqrt{2}}{2}$	$\frac{4}{5}$	$\frac{\sqrt{3}}{2}$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{1}{2}$	0
cos $\theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{4}{5}$	$\frac{\sqrt{2}}{2}$	$\frac{3}{5}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1	$-\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{1}{2}$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
tan $\theta$	0	$\frac{\sqrt{3}}{3}$	$\frac{3}{4}$	1	$\frac{4}{3}$	$\sqrt{3}$	N.E	$-\sqrt{3}$	-1	$-\frac{\sqrt{3}}{2}$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	N.E	$-\sqrt{3}$	-1	$-\frac{\sqrt{3}}{3}$	0
cot $\theta$	N.E	$\sqrt{3}$	$\frac{4}{3}$	1	$\frac{3}{4}$	$\frac{\sqrt{3}}{3}$	0	$-\frac{\sqrt{3}}{3}$	-1	$-\sqrt{3}$	N.E	$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0	$-\frac{\sqrt{3}}{3}$	-1	$-\sqrt{3}$	N.E
Sec $\theta$	1	$\frac{2\sqrt{3}}{3}$	$\frac{5}{4}$	$\sqrt{2}$	$\frac{5}{3}$	2	N.E	-2	$-\sqrt{2}$	$-\frac{2\sqrt{3}}{3}$	-1	$-\frac{2\sqrt{3}}{3}$	$-\sqrt{2}$	-2	N.E	2	$\sqrt{2}$	$\frac{2\sqrt{3}}{3}$	1
Csc $\theta$	N.E	2	$\frac{5}{3}$	$\sqrt{2}$	$\frac{5}{4}$	$\frac{2\sqrt{3}}{3}$	1	$\frac{2\sqrt{3}}{3}$	$\sqrt{2}$	2	N.E	-2	$-\sqrt{2}$	$-\frac{2\sqrt{3}}{3}$	-1	$-\frac{2\sqrt{3}}{3}$	$-\sqrt{2}$	-2	N.E