

**F O R M U L A R I O**  
**CÁLCULO DIFERENCIAL**

Alumno (a) : \_\_\_\_\_ Grado y Grupo: \_\_\_\_\_  
Especialidad: \_\_\_\_\_  
Profesor: Gustavo Acosta Castañeda

**Fórmulas básicas para derivar**

1.  $\frac{dc}{dx} = 0$ ;  $c = \text{constante}$
2.  $\frac{dx}{dx} = 1$
3.  $\frac{d}{dx}(x^n) = nx^{n-1}$
4.  $\frac{d}{dx}(cv) = c \frac{dv}{dx}$
5.  $\frac{d}{dx}\left(\frac{u}{c}\right) = \frac{1}{c} \frac{du}{dx}$
6.  $\frac{d}{dx}\left(\frac{c}{v}\right) = -\frac{c}{v^2} \frac{dv}{dx}$
7.  $\frac{d}{dx}(u+v-w) = \frac{du}{dx} + \frac{dv}{dx} - \frac{dw}{dx}$
8.  $\frac{d}{dx}(v^n) = nv^{n-1} \frac{dv}{dx}$
9.  $\frac{d}{dx}(uv) = u \frac{dv}{dx} + v \frac{du}{dx}$
10.  $\frac{d}{dx}\left(\frac{u}{v}\right) = \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2}$

**Fórmulas para derivar funciones  
logarítmicas y exponenciales**

10.  $\frac{d}{dx}(\ln u) = \frac{1}{u} \frac{du}{dx}$
11.  $\frac{d}{dx}(\log_a u) = \frac{1}{u} \log_a(e) \frac{du}{dx}$
12.  $\frac{d}{dx}(e^u) = e^u \frac{du}{dx}$
13.  $\frac{d}{dx}(a^u) = a^u \ln(a) \frac{du}{dx}$

**Fórmulas para derivar funciones  
trigonométricas directas**

14.  $\frac{d}{dx}(\text{Sen } u) = \text{Cos } u \frac{du}{dx}$
15.  $\frac{d}{dx}(\text{Cos } u) = -\text{Sen } u \frac{du}{dx}$
16.  $\frac{d}{dx}(\text{Tan } u) = \text{Sec}^2 u \frac{du}{dx}$
17.  $\frac{d}{dx}(\text{Cot } u) = -\text{Csc}^2 u \frac{du}{dx}$
18.  $\frac{d}{dx}(\text{Sec } u) = \text{Sec } u \text{Tan } u \frac{du}{dx}$
19.  $\frac{d}{dx}(\text{Csc } u) = -\text{Csc } u \text{Cot } u \frac{du}{dx}$

**Fórmulas para derivar funciones  
trigonométricas inversas**

20.  $\frac{d}{dx}(\text{ArcSen } u) = \frac{1}{\sqrt{1-u^2}} \frac{du}{dx}$
21.  $\frac{d}{dx}(\text{ArcCos } u) = -\frac{1}{\sqrt{1-u^2}} \frac{du}{dx}$
22.  $\frac{d}{dx}(\text{ArcTan } u) = \frac{1}{1+u^2} \frac{du}{dx}$
23.  $\frac{d}{dx}(\text{ArcCot } u) = -\frac{1}{1+u^2} \frac{du}{dx}$
24.  $\frac{d}{dx}(\text{ArcSec } u) = \frac{1}{u\sqrt{u^2-1}} \frac{du}{dx}$
25.  $\frac{d}{dx}(\text{ArcCsc } u) = -\frac{1}{u\sqrt{u^2-1}} \frac{du}{dx}$