Universidad Alas Peruanas

Escuela Profesional de Ingeniería Civil

Alumno: ___________________________________ **Profesor: Ing. Carlos J. Vega Vicente**

Turno: Mañana

FORMULARIO DE DERIVADAS

1. Si $f(x)=c \rightarrow f'(x)=0$ Donde c=constante
2. Si $f(x)=x^n \rightarrow f'(x)=nx^{n-1}$ Donde $n \in Z^+$
3. $(u \cdot v)' = u'v + uv'$
4. $\left(\frac{u}{v}\right)' = \frac{vu' - uv'}{v^2}$
5. Si $f(x)=(g \circ u)_x = g(u(x))$ entonces $f'(x)=g'(u(x)) \cdot u'(x)$
6. Si $f(x)=a^x \rightarrow f'(x)=a^x \cdot \ln a$
7. $\frac{d}{dx}(\log v) = \frac{\log e}{v} \cdot \frac{dv}{dx}$
8. Si $f(x)=e^x \rightarrow f'(x)=e^x$
9. $u = f(x) \rightarrow \frac{d}{dx}(\ln u) = \frac{1}{u} \cdot \frac{du}{dx}$
10. $f(x)=\ln(x) \rightarrow f'(x)=\frac{1}{x}$
11. $D_x ArcSen(U(x)) = \frac{U'(x)}{\sqrt{1-[U(x)]^2}}$
12. $D_x ArcCos(U(x)) = -\frac{U'(x)}{\sqrt{1-[U(x)]^2}}$
13. $D_x ArcTang(U(x)) = \frac{U'(x)}{1+(U(x))^2}$
14. $D_x ArcCot(U(x)) = -\frac{U'(x)}{1+(U(x))^2}$
15. $D_x ArcSec(U(x)) = \frac{U'(x)}{|U(x)|\sqrt{[U(x)]^2-1}}$
16. $D_x ArcCo\sec(U(x)) = -\frac{U'(x)}{|U(x)|\sqrt{[U(x)]^2-1}}$
17. $D_x|U(x)| = \frac{U(x)}{|U(x)|} \cdot U'(x)$
18. $D_x sen(v(x)) = \cos(v(x)) \cdot v'(x)$
19. $D_x \cos(v(x)) = -sen(v(x)) \cdot v'(x)$
20. $D_x tg(v(x)) = \sec^2(v(x)) \cdot v'(x)$
21. $D_x ctg(v(x)) = -\csc^2(v(x)) \cdot v'(x)$
22. $D_x \sec(v(x)) = \sec(v(x)) \cdot tg(v(x)) \cdot v'(x)$
23. $D_x \csc(v(x)) = -\csc(v(x)) \cdot ctg(v(x)) \cdot v'(x)$

Derivada de la funciones Hiperbólicas

- $\frac{d}{dx}[senh(u)] = (\cosh(u)) \cdot u'$
- $\frac{d}{dx}[\cosh(u)] = (senh(u)) \cdot u'$
- $\frac{d}{dx}[\tanh(u)] = (\sec h^2(u)) \cdot u'$
- $\frac{d}{dx}[\coth(u)] = -(\cos ech^2(u)) \cdot u'$
- $\frac{d}{dx}[\sec h(u)] = -(\sec h(u) \cdot \tanh(u)) \cdot u'$
- $\frac{d}{dx}[\cos ech(u)] = -(\cos ech(u) \cdot \coth(u)) \cdot u'$