Aula 10 - 11.4/1d

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- $du = \frac{\partial f}{\partial s}(s,t)\,ds + \frac{\partial f}{\partial t}(s,t)\,dt$

- Derivadas parciais

$$\frac{\partial f}{\partial s} = e^{s^2-t^2}\,\frac{d}{ds} = \frac{d}{du}e^{u}\cdot\frac{d}{ds}(s^2-t^2)$$

$f = e^u$, $u = s^2-t^2$

$$\frac{\partial f}{\partial s} = e^{s^2-t^2}\cdot 2s$$

$$\frac{\partial f}{\partial t} = e^{s^2-t^2}\,\frac{d}{dt} = \frac{d}{du}e^{u}\cdot\frac{d}{dt}(s^2-t^2)$$

$$\frac{\partial f}{\partial t} = e^{s^2-t^2}\cdot(-2t)$$

Portanto a diferencial será:

$$du = 2se^{s^2-t^2}ds - 2te^{s^2-t^2}dt$$