

DERIVATA DI  $f(x)^{g(x)}$

$F(x)$

$$y = f(x)^{g(x)}$$

$$y = e$$

$$g(x) \ln f(x)$$

1/1

$$\begin{aligned} D(f(x)^{g(x)}) &= D(e^{g(x) \ln f(x)}) = e^{g(x) \ln f(x)} \cdot D(g(x) \ln f(x)) = \\ &= e^{g(x) \ln f(x)} \left[ g'(x) \ln f(x) + g(x) \frac{1}{f(x)} f'(x) \right] \end{aligned}$$

$$D(e^{f(x)}) = e^{f(x)} f'(x)$$

$$D(g(x) \ln f(x)) = g'(x) \ln f(x) + g(x) \frac{1}{f(x)} f'(x)$$

$$D(\ln(f(x))) = \frac{1}{f(x)} f'(x)$$