03 - Denned Logardineer.

If 
$$(x) = x^{x} = y = x^{x}$$

Log =  $\ln x^{x}$ 

- 1. f(x) = xx -> y= xx / ln()

1. y' = ln(x) + x

 $\frac{y'}{y} = \ln(x) + 1$ 

 $2. \qquad f(x) = 2x^{x^2}$ 

y = 2xx2 / ln1)

 $\frac{y'}{y} = 2 \times \ln(2 \times) + \frac{x^2}{2 \times} \cdot 2$ 

y' = y ( ln(zx2) + x)

 $y' = 2x^{x^2} \left( \ln \left( 2x^{2x} \right) + x \right)$ 

ln(y) = ln(2xx2)

y' = y (ln(x)+1), y= xx

y' = xx ( lu(x) +1)

- ln(y) = x ln(x) / ()'