

# Logarithmic Differentiation

Stephen Styles

October 12, 2019

1. Find the derivative of  $y = x^x$

2. Find the derivative of  $y = \frac{(x-2)^2}{\sqrt{x^2+1}}$

3. Find the derivative of  $y = \sin(x)^{2x}$

4. Find the derivative of  $y = \frac{(1-x)(2+x)^2(3-x)^3}{(4+x)^4}$

5. Find the derivative of  $y = \ln(\sin(x))^x$

6. Find the derivative of  $y = \frac{(6x^2 + 9)^2}{\sqrt{3x^3 - 2}}$