1.1 $y = (x^5)^{\ln x}$

$\ln y = \ln x \ln x^5$

$= 5 \ln x \ln x$

$= 5(\ln x)^2$

$\frac{1}{y}\frac{dy}{dx} = 5\frac{d}{dx}(\ln x)^2$

$\frac{1}{y}\frac{dy}{dx} = 10 \ln x \cdot \frac{1}{x}$

$\frac{1}{y}\frac{dy}{dx} = \frac{10 \ln x}{x}$

$\frac{dy}{dx} = (x^5)^{\ln x}\left(\frac{10 \ln x}{x}\right)$