

Derivation: $\frac{d}{dx} \ln(x) = \frac{1}{x}$

$\frac{d}{dx} \ln(x^2) = \frac{2x}{x^2} = \frac{2}{x}$

$\frac{d}{dx} \ln(x^3) = \frac{3x^2}{x^3} = \frac{3}{x}$

$\frac{d}{dx} \ln(x^4) = \frac{4x^3}{x^4} = \frac{4}{x}$

$\frac{d}{dx} \ln(x^5) = \frac{5x^4}{x^5} = \frac{5}{x}$

$\frac{d}{dx} \ln(x^6) = \frac{6x^5}{x^6} = \frac{6}{x}$

$\frac{d}{dx} \ln(x^7) = \frac{7x^6}{x^7} = \frac{7}{x}$

$\frac{d}{dx} \ln(x^8) = \frac{8x^7}{x^8} = \frac{8}{x}$

$\frac{d}{dx} \ln(x^9) = \frac{9x^8}{x^9} = \frac{9}{x}$

$\frac{d}{dx} \ln(x^{10}) = \frac{10x^9}{x^{10}} = \frac{10}{x}$

$\frac{d}{dx} \ln(x^{11}) = \frac{11x^{10}}{x^{11}} = \frac{11}{x}$

$\frac{d}{dx} \ln(x^{12}) = \frac{12x^{11}}{x^{12}} = \frac{12}{x}$

$\frac{d}{dx} \ln(x^{13}) = \frac{13x^{12}}{x^{13}} = \frac{13}{x}$

$\frac{d}{dx} \ln(x^{14}) = \frac{14x^{13}}{x^{14}} = \frac{14}{x}$

$\frac{d}{dx} \ln(x^{15}) = \frac{15x^{14}}{x^{15}} = \frac{15}{x}$