

4. $\frac{1}{x^2} = x^{-2}$:
 $\frac{d}{dx} x^{-2} = -2x^{-3} = -\frac{2}{x^3}$
3. $\frac{1}{x^3} = x^{-3}$:
 $\frac{d}{dx} x^{-3} = -3x^{-4} = -\frac{3}{x^4}$
2. $\frac{1}{x^4} = x^{-4}$:
 $\frac{d}{dx} x^{-4} = -4x^{-5} = -\frac{4}{x^5}$
1. $\frac{1}{x^5} = x^{-5}$:
 $\frac{d}{dx} x^{-5} = -5x^{-6} = -\frac{5}{x^6}$

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

7. $\frac{d}{dx} \ln(x^2) = \frac{1}{x^2} \cdot 2x = \frac{2}{x}$
6. $\frac{d}{dx} \ln(x^3) = \frac{1}{x^3} \cdot 3x^2 = \frac{3}{x}$
5. $\frac{d}{dx} \ln(x^4) = \frac{1}{x^4} \cdot 4x^3 = \frac{4}{x}$
4. $\frac{d}{dx} \ln(x^5) = \frac{1}{x^5} \cdot 5x^4 = \frac{5}{x}$
3. $\frac{d}{dx} \ln(x^6) = \frac{1}{x^6} \cdot 6x^5 = \frac{6}{x}$
2. $\frac{d}{dx} \ln(x^7) = \frac{1}{x^7} \cdot 7x^6 = \frac{7}{x}$
1. $\frac{d}{dx} \ln(x^8) = \frac{1}{x^8} \cdot 8x^7 = \frac{8}{x}$

3. $\frac{d}{dx} \ln(x^2 + 1)$: $\frac{d}{dx} \ln(x^2 + 1) = \frac{1}{x^2 + 1} \cdot 2x = \frac{2x}{x^2 + 1}$

6. $\frac{d}{dx} \ln(x^2 + 2) = \frac{1}{x^2 + 2} \cdot 2x = \frac{2x}{x^2 + 2}$
5. $\frac{d}{dx} \ln(x^2 + 3) = \frac{1}{x^2 + 3} \cdot 2x = \frac{2x}{x^2 + 3}$
4. $\frac{d}{dx} \ln(x^2 + 4) = \frac{1}{x^2 + 4} \cdot 2x = \frac{2x}{x^2 + 4}$
3. $\frac{d}{dx} \ln(x^2 + 5) = \frac{1}{x^2 + 5} \cdot 2x = \frac{2x}{x^2 + 5}$
2. $\frac{d}{dx} \ln(x^2 + 6) = \frac{1}{x^2 + 6} \cdot 2x = \frac{2x}{x^2 + 6}$
1. $\frac{d}{dx} \ln(x^2 + 7) = \frac{1}{x^2 + 7} \cdot 2x = \frac{2x}{x^2 + 7}$

