

$$\frac{(x+1)^3}{(x-1)^2} = x + 5 + \frac{4(3x-1)}{(x-1)^2}$$

$$\frac{d}{dx} \frac{(x+1)^3}{(x-1)^2} = \frac{(x-5)(x+1)^2}{(x-1)^3}$$

$$\frac{d^2}{dx^2} \frac{(x+1)^3}{(x-1)^2} = \frac{24(x+1)}{(x-1)^4}$$