

(1)

$$\begin{aligned} & \lim_{x \rightarrow 0} \frac{f(3x) - f(0)}{x} \\ &= \lim_{x \rightarrow 0} \frac{3(f(3x) - f(0))}{3x - 0} \\ &= 3f'(0) = 3a \end{aligned}$$