

$$\textcircled{1} f(x) = 4x - 3$$

$$\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h} = f'(x)$$

$$\frac{4(x+h) - 3 - (4x - 3)}{h} = \frac{4h}{h} = 4$$

$$(5) \quad g(x) = x^{-1} = \frac{1}{x}$$

$$\lim_{h \rightarrow 0} \frac{x(x+h) \left( \frac{1}{x+h} - \frac{1}{x} \right)}{x(x+h) \cdot h} \rightarrow \frac{x - (x+h)}{h x (x+h)} = \frac{-h}{h x (x+h)}$$
$$= -\frac{1}{x^2}$$