

1. $f(x) = 5x - 3$. Using the definition of derivative:

$$f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h} = \lim_{h \rightarrow 0} \frac{5(x+h) - 3 - (5x - 3)}{h}$$

$$= \lim_{h \rightarrow 0} \frac{\cancel{5x} + 5h - \cancel{3} - \cancel{5x} + \cancel{3}}{h}$$

$$= \lim_{h \rightarrow 0} \frac{5h}{h} = \lim_{h \rightarrow 0} 5 = \boxed{5}$$

$$\text{So } f'(x) = 5$$