

a.) $f(x) = 10x^3$

Use: $\frac{d}{dt}(ct^n) = cnt^{n-1}$

for n, c constants.

So:

$$\frac{df(x)}{dx} = 3 \cdot 10x^{3-1} = \underline{30x^2}$$

b.) $f(x) = \frac{6}{x} + 5x = 6x^{-1} + 5x$

So: $\frac{df(x)}{dx} = 6(-1)x^{-1-1} + 5x^0$

$$= \underline{\underline{\frac{-6}{x^2} + 5}}$$