6. $y = 9x^2 - 4x + 2$

$\frac{dy}{dx} = 18x - 4$

$dy = (18x - 4)\,dx$

7. $y = \frac{x-3}{x+5}$ $\quad P = x-3,\ P' = 1$ $\quad Q = x+5,\ Q' = 1$

$\frac{P'Q - PQ'}{Q^2}$

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

$dy = \left(\frac{x+5-x+3}{(x+5)^2}\right)dx$

$dy = \left(\frac{8}{(x+5)^2}\right)dx$