

$$1) \ y = \frac{3x-7}{5-2x};$$

$$2) \ y = \frac{4x+1}{x^2-2};$$

$$3) \ y = (3-x)^5;$$

$$4) \ y = (6x^5 - 2x)^8;$$

$$\begin{aligned} y' &= \left(\frac{3x-7}{5-2x} \right)' = \frac{(3x-7)'(5-2x) - (3x-7)(5-2x)'}{(5-2x)^2} = \frac{3(5-2x) - (3x-7)(-2)}{(5-2x)^2} = \\ &= \frac{15 - 6x + 6x - 14}{(5-2x)^2} = \frac{1}{(5-2x)^2} \end{aligned}$$

$$\begin{aligned} y' &= \left(\frac{4x+1}{x^2-2} \right)' = \frac{(4x+1)'(x^2-2) - (4x+1)(x^2-2)'}{(x^2-2)^2} = \frac{4(x^2-2) - (4x+1) \cdot 2x}{(x^2-2)^2} = \\ &= \frac{4x^2 - 8 - 8x^2 - 2x}{(x^2-2)^2} = \frac{-4x^2 - 2x - 8}{(x^2-2)^2} \end{aligned}$$

$$y' = ((3-x)^5)' = 5(3-x)^4(3-x)' = 5(3-x)^4(-1) = -5(3-x)^4$$

$$y' = ((6x^5 - 2x)^8)' = 8(6x^5 - 2x)^7(6x^5 - 2x)' = 8(6x^5 - 2x)^7(30x^4 - 2)$$