4. $y = \dfrac{2}{\sqrt{7x-2}}$

$y = \dfrac{2}{(7x-2)^{\frac{1}{2}}}$

$y = 2(7x-2)^{-\frac{1}{2}}$

$y' = 2\left(-\frac{1}{2}\right)(7x-2)^{-\frac{1}{2}-1} \cdot \frac{d}{dx}(7x-2)$

$y' = -(7x-2)^{-\frac{3}{2}} \cdot 7$

$y' = \dfrac{-7}{(7x-2)^{3/2}}$

5. $g(x) = \left(\dfrac{7x-1}{3x+2}\right)^4$

$g'(x) = 4\left(\frac{7x-1}{3x+2}\right)^3 \cdot \frac{d}{dx}\left(\frac{7x-1}{3x+2}\right)$ $\quad P \quad P' = 7$ $\quad Q \quad Q' = 3$

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

$g'(x) = 4\left(\frac{7x-1}{3x+2}\right)^3 \cdot \dfrac{7(3x+2) - (7x-1)3}{(3x+2)^2}$

$g'(x) = 4 \cdot \dfrac{(7x-1)^3}{(3x+2)^3} \cdot \dfrac{21x+14-21x+3}{(3x+2)^2}$

$= 4 \cdot \dfrac{(7x-1)^3}{(3x+2)^3} \cdot \dfrac{17}{(3x+2)^2}$

$= \dfrac{68(7x-1)^3}{(3x+2)^5}$

6. $g(x) = \sin^3(7x)$

$g(x) = [\sin(7x)]^3$

$g'(x) = 3[\sin(7x)]^2 \cdot \frac{d}{dx}[\sin(7x)]$

$= 3\sin^2(7x) \cdot \cos(7x) \cdot \frac{d}{dx}(7x)$

$= 3\sin^2(7x)\cos(7x) \cdot 7$

$= 21\sin^2(7x)\cos(7x)$