5. $f(x) = \frac{\sin x}{5e^x}$ $c = 0$ (P / Q)

$P' = \cos x \quad Q' = 5e^x$

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

$f'(x) = \frac{\cos x \cdot 5e^x - \sin x \cdot 5e^x}{(5e^x)^2}$

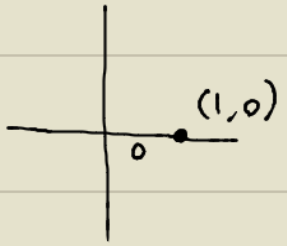
$= \frac{5e^x[\cos x - \sin x]}{(5e^x)(5e^x)}$

$= \frac{\cos x - \sin x}{5e^x}$

$f'(0) = \frac{\cos 0 - \sin 0}{5e^0}$

$f'(0) = \frac{1 - 0}{5(1)}$

$= \frac{1}{5}$



6. $y = \frac{8x^3 - 1}{5}$

$= \frac{8x^3}{5} - \frac{1}{5}$

$= \frac{8}{5}x^3 - \frac{1}{5}$

$y' = \frac{8}{5} \cdot 3x^2$

$= \frac{24}{5}x^2$

7. $y = \frac{5x^{4/3}}{x^1}$

$y = \frac{5x^{4/3}}{x^{3/3}}$

$y = 5x^{1/3}$

$y' = 5 \cdot \frac{1}{3}x^{\frac{1}{3}-1}$

$y' = \frac{5}{3}x^{-\frac{2}{3}}$

$y' = \frac{5}{3x^{2/3}}$

e.x

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

$= \frac{(x+1)(x-1)}{x+1}$

$y = x - 1$

$y' = 1$