7. $f(x) = \frac{x}{x+5}$ $[2,5]$

① $p' = 1 \quad Q' = 1$

$$\frac{p'Q - pQ'}{Q^2}$$

$$f'(x) = \frac{1(x+5) - x(1)}{(x+5)^2}$$

$$= \frac{x+5-x}{(x+5)^2}$$

$$= \frac{5}{(x+5)^2}$$

② $(x+5)^2 = 0$

$x+5 = 0$

~~$x = -5$~~

③ $x = 2$ $\qquad$ $x = 5$

$f(2) = \frac{2}{2+5} = \frac{2}{7}$ $\qquad$ $f(5) = \frac{5}{5+5} = \frac{5}{10} = \frac{1}{2}$

ABS MIN $(2, \frac{2}{7})$ $\qquad$ ABS MAX $(5, \frac{1}{2})$

8. $f(x) = -2\sin x \quad [0, 2\pi]$

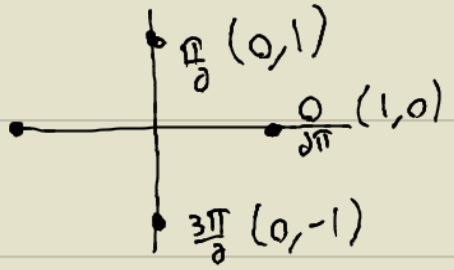
① $f'(x) = -2\cos x$

② $-2\cos x = 0$

$\frac{-2\cos x}{-2} = \frac{0}{-2}$

$\cos x = 0$

$x = \frac{\pi}{2}, \frac{3\pi}{2}$



③ $x = \frac{\pi}{2}$ $\qquad$ $x = \frac{3\pi}{2}$ $\qquad$ $x = 0$ $\qquad$ $x = 2\pi$

$f(\frac{\pi}{2}) = -2\sin\frac{\pi}{2}$ $\qquad$ $f(\frac{3\pi}{2}) = -2\sin\frac{3\pi}{2}$ $\qquad$ $f(0) = -2\sin(0)$ $\qquad$ $f(2\pi) = -2\sin(2\pi)$

$= -2(1)$ $\qquad$ $= -2(-1)$ $\qquad$ $= -2(0)$ $\qquad$ $= -2(0)$

$= -2$ $\qquad$ $= 2$ $\qquad$ $= 0$ $\qquad$ $= 0$

ABS MIN $(\frac{\pi}{2}, -2)$ $\qquad$ ABS. MAX $(\frac{3\pi}{2}, 2)$