1C

$$f(x) = \frac{x}{x+\frac{c}{x}}$$

$$\frac{df(x)}{dx} = \frac{d}{dx}\left(\frac{x}{x+\frac{c}{x}}\right)$$

$$= \frac{\left(x+\frac{c}{x}\right)\frac{d}{dx} - x \cdot \frac{d}{dx}\left(x+\frac{c}{x}\right)}{\left(x+\frac{c}{x}\right)^2}$$

$$= \frac{\left(x+\frac{c}{x}\right) - x\left(1+\frac{-c}{x}\right)}{\left(x+\frac{c}{x}\right)^2}$$

$$= x+\frac{c}{x} - x+\frac{c}{x^2}$$

$$= \frac{c}{x}+\frac{c}{x^2}$$

$$\frac{\left(x+\frac{c}{x}\right)^2}{} = \frac{\frac{c}{x}+\frac{c}{x^2}}{\left(x+\frac{c}{x}\right)^2}$$