

■ If  $y = \frac{u}{v}$  then  $\frac{dy}{dx} = \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2}$  where  $u$  and  $v$  are functions of  $x$ .

The quotient rule in function notation is:

■ If  $f(x) = \frac{g(x)}{h(x)}$ , then  $f'(x) = \frac{h(x)g'(x) - g(x)h'(x)}{(h(x))^2}$

Given that  $y = \frac{x}{2x + 5}$  find  $\frac{dy}{dx}$

A curve  $C$  with equation  $y = \frac{\sin x}{e^{2x}}$ ,  $0 < x < \pi$ , has a stationary point at  $P$ . Find the coordinates of  $P$ . Give your answer to 3 significant figures.