

MCS21 Homework 20

Do all work on a separate sheet of paper.

1. If $y = \frac{1}{5x-3}$, find the value of $y'(1)$.

2. If $y = \frac{3}{\sqrt{x+2}}$, find the value of $y'(1)$.

3. Find $\frac{dx}{dt}$ if $x = \frac{3t}{2t+1}$.

4. Find $\frac{dx}{dt}$ if $x = \frac{t^2+1}{3t}$.

5. Find $\left. \frac{dy}{dx} \right|_{x=1}$ if $y = \frac{2x-1}{x^2+3}$.

6. Find $\left. \frac{dy}{dx} \right|_{x=1}$ if $y = \frac{4x+1}{x^2-5}$.

7. Find $\left. \frac{dy}{dx} \right|_{x=1}$ if $y = \left(\frac{3x+2}{x} \right) (x^{-5} + 1)$.