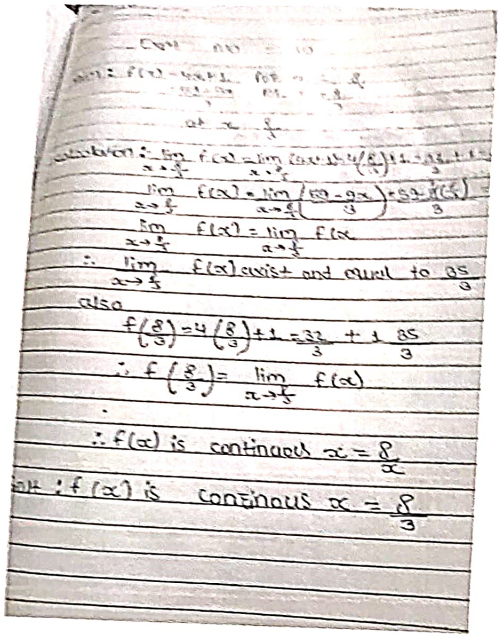
प्रयोग वही गणित



Given $f(x) = 4x+1$, for $x < \frac{8}{3}$

$= \frac{32}{3} + 1$, for $x > \frac{8}{3}$

at $x = \frac{8}{3}$

Solution: $\lim_{x \to \frac{8}{3}} f(x) = \lim_{x \to \frac{8}{3}} (4x+1) = 4\left(\frac{8}{3}\right)+1 = \frac{32}{3}+1$

$\lim_{x \to \frac{8}{3}} f(x) = \lim_{x \to \frac{8}{3}} \left(\frac{32-9x}{3}\right) = \frac{32-9\left(\frac{8}{3}\right)}{3}$

$\lim_{x \to \frac{8}{3}} f(x) = \lim_{x \to \frac{8}{3}} f(x)$

$\therefore \lim_{x \to \frac{8}{3}} f(x)$ exist and equal to $\frac{35}{3}$

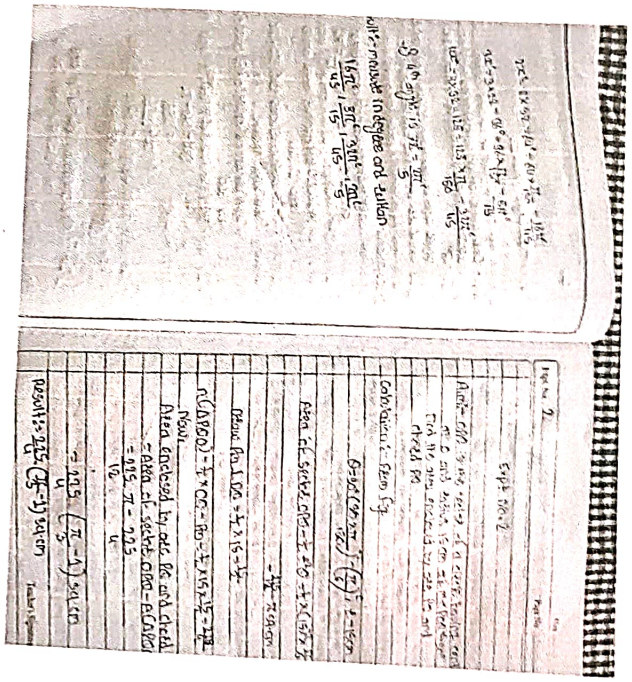
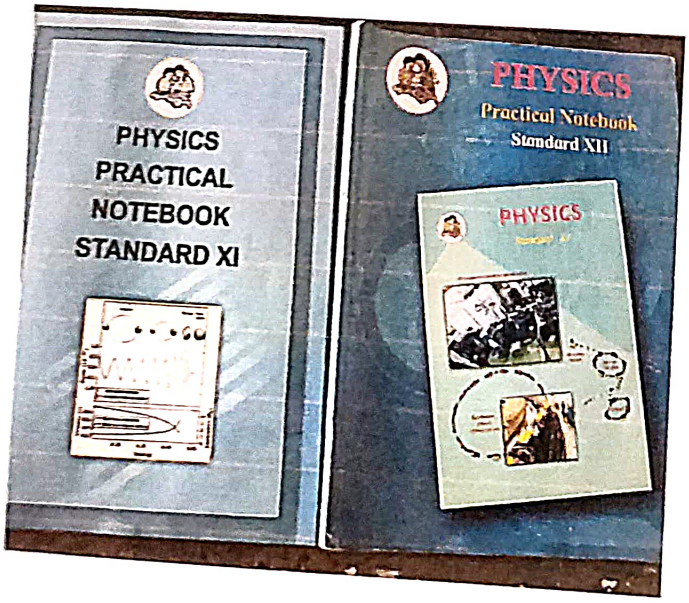
also

$f\left(\frac{8}{3}\right) = 4\left(\frac{8}{3}\right)+1 = \frac{32}{3}+1 = \frac{35}{3}$

$\therefore f\left(\frac{8}{3}\right) = \lim_{x \to \frac{8}{3}} f(x)$

$\therefore f(x)$ is continued $x = \frac{8}{x}$

Hence: $f(x)$ is continous $x = \frac{8}{3}$



प्रयोग वही भौतिकशास्त्र