

Maths paper - at home

Woke!

$\ln = \log$, okay?
My calc uses $\ln = \log$

1 $y = \frac{x^2}{2x+1} = (x^2)/(2x+1) \rightarrow \frac{d}{dx} \left(\frac{x^2}{2x+1} \right)$
 $\frac{2x(x+1)}{(2x+1)^2} \leftarrow \frac{2x}{2x+1} - \frac{2x^2}{(2x+1)^2}$

2 $y = \sqrt{x^2+1} \rightarrow (x^2+1)^{0.5} \rightarrow \frac{d}{dx} ((x^2+1)^{0.5})$
 $\frac{x}{\sqrt{x^2+1}}$ or $\frac{x}{(x^2+1)^{0.5}}$

3 $y = 3x^{1.5} + \frac{2}{x^2} - 6x = (3x)^{1.5} + (3/(x^2)) - (6x)$ [both are the same] $\rightarrow \frac{d}{dx} \left((3x)^{1.5} + \frac{2}{x^2} - 6x \right)$
 $7.194232^{0.5} - \frac{6}{x} - 6$

4 $y = \sec^3 4x = (\sec^3) 4x$

5 $y = (x + \sin 2x) = (x + (\sin(2x))) \rightarrow \frac{d}{dx} (x + \sin(2x))$
 $2(\cos(2x)) + 1$

6 $y = \frac{1-10x}{(2x-1)^2} = (1-(10x))/((2x-1)^2) \rightarrow \frac{d}{dx} \left(\frac{1-10x}{(2x-1)^2} \right)$
 $\frac{20x+6}{(2x-1)^3}$