Нахождение производной

y=sqrt(4x-1)+arctg sqrt(4x-1)

1. y = $\sqrt{4x-1}$

y` = $\frac{1}{2}\*(4x-1)^{\frac{-1}{2}}\*4= \frac{2}{\sqrt{4x-1}}$

1. y = arctg$\sqrt{4x-1}$

$y`= \frac{1}{1+ (4x-1)^{2}}\*\frac{2}{\sqrt{4x-1}}\*4$ =

$$= \frac{8}{\left(1+16x^{2 }- 8x+1\right)\*\sqrt{4x-1} }= \frac{8}{2\*\left(8x^{2 }- 4x+1\right)\*\sqrt{4x-1}}= $$

 =$ \frac{4}{\left(8x^{2 }- 4x+1\right)\*\sqrt{4x-1}}$

1. y=sqrt(4x-1)+arctg sqrt(4x-1)

$$y`= \frac{2}{\sqrt{4x-1}} + \frac{4}{\left(8x^{2 }- 4x+1\right)\*\sqrt{4x-1}}= $$

$= \frac{2\*\left(8x^{2 }- 4x+1\right)+ 4}{\left(8x^{2 }- 4x+1\right)\*\sqrt{4x-1}}$ =

$$= \frac{\left(16x^{2 }- 8x+2\right)+ 4}{\left(8x^{2 }- 4x+1\right)\*\sqrt{4x-1}}=$$

$$= \frac{\left(16x^{2 }- 8x+6\right)}{\left(8x^{2 }- 4x+1\right)\*\sqrt{4x-1}}$$