

1) Evaluate the integral

$$\int \frac{dx}{\sqrt{x}(1+x)}$$

Hint: Use substitution.

2) Differentiate the function:

$$y = \cosh(e^{\sqrt{\tan 3x}})$$

3) Evaluate the limit:

$$\lim_{x \rightarrow 0} \frac{x}{\sin^{-1}(4x)}$$