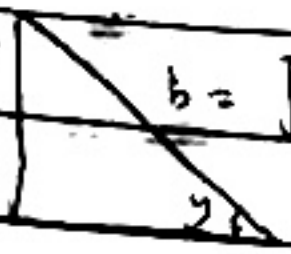
Name: Effanga, Bassey Effanga
19/sci01/041

① $y = \arctan 3x^4$

$y = 3x^4$

$\tan^{-1}$

$\tan y = 3x^4$



$\tan y = 3x^4$

$\sec^2 y \left(dy/dx\right) = 12x^3$

$dy/dx = 12x^3$

$\sec^2 y$

from the $\triangle$

$\cos y = \dfrac{1}{\sqrt{1+9x^8}}$

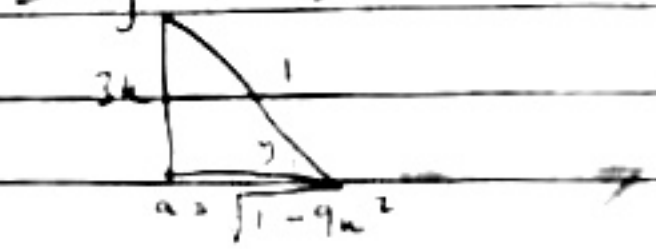
$\sec^2 y = 1 + 9x^8$

$\therefore dy/dx = \dfrac{12x^3}{1+9x^8}$

(2) $y = \cos \sin 3x$

$y = \frac{3x}{\sin^{-1}}$

$\sin y = 3x$



$\sin y = 3x$

$\cos y \left(\frac{dy}{dx}\right) = 3$

$\frac{dy}{dx} = \frac{3}{\cos y}$

from the Δ

$\cos y = \frac{\sqrt{1-9x^2}}{1}$

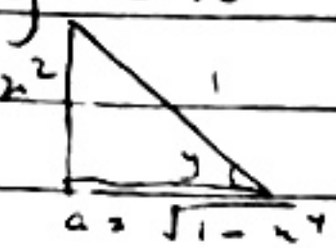
$\therefore \frac{dy}{dx} = \frac{3}{\sqrt{1-9x^2}}$

(3) $y = \sin^{-1} x^2$

$y = x^2$

$\sin^{-1}$

$\sin y = x^2$



$\sin y = x^2$

$\cos y \left(dy/dx\right) = 2x$

$dy/dx = 2x / \cos y$

from the Δ

$\cos y = \sqrt{1-x^4} / 1$

$dy/dx = 2x / \sqrt{1-x^4}$