

Quiz 3 (Dr. AL-Homidan)(161)

Name:-

ID:-

Q1 For what values of a & b is the line  $2x + y = b$  tangent to the curve  $y = ax^2$  when  $x = 2$

$$y' = 2ax \qquad y = -2x + b$$

$$(x_0, y_0) = (2, -2) \qquad -2 = 2a(2) \Rightarrow a = -\frac{1}{2}$$

$$y - y_0 = m(x - x_0) \qquad b = 2$$

$$y + 2 = -2(x - 2)$$

$$y = -2x + 4 - 2 = -2x + 2$$

Q2 Find the derivative of the function. Simplify where possible.

$$y = \cos^{-1}(\sin^{-1} t)$$

$$y' = \frac{-1}{\sqrt{1 - [\sin^{-1} t]^2}} \cdot \frac{1}{\sqrt{1 - t^2}}$$