

PROBLEM

If $x^2 + y^2 = 1$ then *(2000)*

(a) $yy'' - 2(y')^2 + 1 = 0$

(b) $yy'' + (y')^2 + 1 = 0$

(c) $yy'' + (y')^2 - 1 = 0$

(d) $yy'' + 2(y')^2 + 1 = 0$

(b) $x^2 + y^2 = 1 \Rightarrow 2x + 2yy' = 0 \Rightarrow x + yy' = 0$

$\Rightarrow 1 + yy'' + (y')^2 = 0 \Rightarrow yy'' + (y')^2 + 1 = 0$