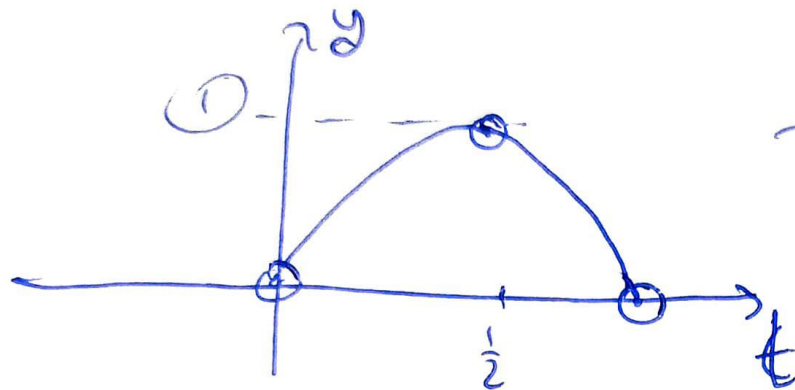


$$y(0) = 0, \quad y\left(\frac{1}{2}\right) = 1, \quad y(1) = 0$$



→ a line X

→ exponential X

→ may be sin/cos function

$$\Rightarrow 4 - 4k < 0$$

$$\Rightarrow 4 < 4k$$

$$\Rightarrow 1 < k$$

Thus least possible value = $\boxed{1}$ k