Question 1: If $A = [(x, y) : x^2 + y^2 = 25]$ and $B = [(x, y) : x^2 + 9y^2 = 144]$, then $A \cap B$ contains _____number of points.

Solution:

A = Set of all values $(x, y) : x^2 + y^2 = 25 = 5^2$

$B = [x^2 / 144] + [y^2 / 16] = 1$

i.e., $[x^2 / (12)^2] + [y^2 / (4)^2] = 1$.

Clearly, $A \cap B$ consists of four points.