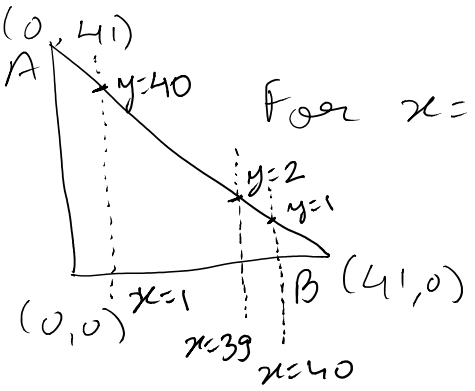
The number of points, having both co-ordinates as integers, that lie in the interior of the triangle with vertices (0, 0), (0, 41) and (41, 0), is :

(1) 820

(2) 780

(3) 901

(4) 861



For $x = 1$; y can be from 1 to 39 as $y = 40$ lies on the line AB and $y = 41$ lies outside the triangle.

∴ Number of integral co-ordinates lying inside the triangle, when

$x = 1$ is 39
$x = 2$ is 38
⋮
$x = 39$ is 1
$x = 40$ is 0
$x = 41$ is 0

Adding them up, we get

$1 + 2 + 3 + \cdots + 39$

$= \frac{n(n+1)}{2} = \frac{39 \times 40}{2}$

$= 780$

∴ Correct option is (2)