Trigonometry Functions - Class XI

Past Year JEE Questions

Questions

Quetion: 01

The number of integral values of 'k' for which the equation $3\sin x + 4\cos x = k + 1$ has a solution, k∈R is _____.

Solutions

Solution: 01

Answer

Correct Answer is **11**

Explanation

We know,

$-\sqrt{a^2 + b^2} \le a\cos x + b\sin x \le \sqrt{a^2 + b^2}$

$\therefore -\sqrt{3^2 + 4^2} \le 3\cos x + 4\sin x \le \sqrt{3^2 + 4^2}$

$-5 \le k + 1 \le 5$

$-6 \le k \le 4$

$\therefore$ Set of integers = $-6, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4$ = Total 11 intergers.