Past Year JEE Questions

Questions

Quetion: 01

If the lines $\frac{x-2}{1} = \frac{y-3}{1} = \frac{z-4}{-k}$ and $\frac{x-1}{k} = \frac{y-4}{2} = \frac{z-5}{1}$ are coplanar, then k can have

A. any value
B. exactly one value
C. exactly two values
D. exactly three values

Solutions

Solution: 01

Explanation

Given lines will be coplanar

If $\begin{vmatrix} -1 & 1 & 1 \\ 1 & 1 & -k \\ k & 2 & 1 \end{vmatrix} = 0$

$\Rightarrow -1\,(1 + 2k) - \left(1 + k^2\right) + 1\,(2 - k) = 0$

$\Rightarrow k = 0, -3$