

Assignment 1

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Download all python codes from

<https://github.com/Vallidevibolla/Numerical-Ass.git>

and latex-tikz codes from

<https://github.com/Vallidevibolla/Numerical-Ass.git>

1 QUESTION No.14

Find the value of K, if the points (K,3), (6,-2) and (-3,4) are collinear.

2 SOLUTION

Given

(K,3), (6,-2) and (-3,4) are collinear.

Let us assume A, B, C be the three collinear points.

Let $A=(K, 3)$ consider (K,3) as (x_1, y_1)

$B=(6, -2)$ consider (6,-2) as (x_2, y_2)

$C=(-3, 4)$ consider (-3,4) as (x_3, y_3)

So, as given that the points are collinear then

$$x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2) = 0$$

$$\Rightarrow K(-2-4) + 6(4-3) + [-3(3-(-2))] = 0$$

$$\Rightarrow (-6K + 6 - 15) = 0$$

$$\Rightarrow -6K - 9 = 0$$

$$\Rightarrow \boxed{K = -3/2}$$

(2.0.1)

Finally the value of K is $-3/2$