ASSIGNMENT 1

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Download all python codes from

https://github.com/Vallidevibolla/bolla/blob/main/Collinear.py

and latex-tikz codes from

https:// github.com/Vallidevibolla/bolla/blob/main/main.tex

1 Question No.14

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

2 Solution

Given,

$(\mathbf{K},\mathbf{3}),(\mathbf{6},\mathbf{-2})$ and $(\mathbf{-3},\mathbf{4})$ are collinear.

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

Let

$$\mathbf{A} = (K, 3) \tag{2.0.1}$$

$$\mathbf{B} = (6, -2) \tag{2.0.2}$$

$$\mathbf{C} = (-3, 4) \tag{2.0.3}$$

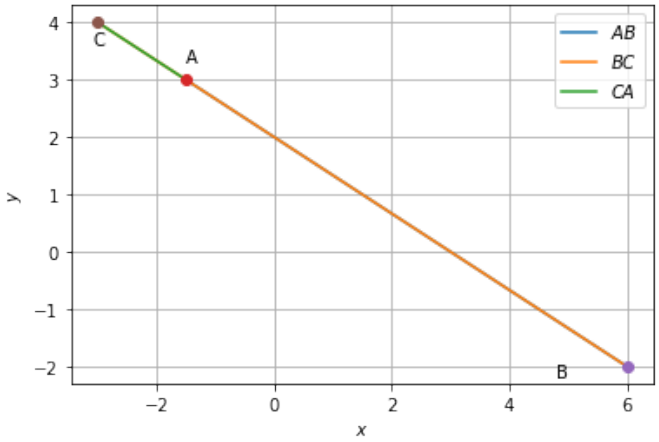

Fig. 0: collinear

So, as given that the points are collinear then

$$\mathbf{x1}(\mathbf{y2}-\mathbf{y3})+\mathbf{x2}(\mathbf{y3}-\mathbf{y1})+\mathbf{x3}(\mathbf{y1}-\mathbf{y2})=0 \tag{2.0.4}$$

$$\implies K(-2-4)+6(4-3)+-3(3-(-2)=0 \tag{2.0.5}$$

$$\implies -6K+6-15=0 \tag{2.0.6}$$

$$\implies -6K-9=0 \tag{2.0.7}$$

$$\implies K=-3/2 \tag{2.0.8}$$

$\therefore$ Finally the value of K is $\frac{-3}{2}$