Assignment 7

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2. Given three points, check whether they lie on a straight line (collinear) or not. [Google]
For example:
Input- [(1,1), (1,6), (0,9)]
Output- No
Input- [(1,1), (1,4), (1,5)]
Output- Yes

CODE

```
function isCollinear([x1,  y1,  x2, y2,  x3,  y3])
{
   var area = x1 * (y2 - y3) +
            x2 * (y3 - y1) +
            x3 * (y1 - y2)

   if(area === 0 ){
    return "Yes"
   }
   return " No"
 }

const array = [1,1,1,4,1,5]
const result = isCollinear(array)
console.log(result)
```

OUTPUT

```
Yes
```

ANALYSIS

Here we have three points,So we need to know the property of collinearity to solve the problem, In other words, if points X(a1 ,b1) ,Y (a2, b2), and Z(a3, b3) are three points in the XY-plane, they will lie on a line, that is, three points are collinear if and only if the slope of these points are equal

X(y2-y3) + Y(y3 - y1) + xZ (y1 - y2) = 0

Here we calculate the collinearity using distance formula

Area of triangle ABC = (½)| x1(y2 – y3) + x2(y3 – y1) + x3(y1 – y2)| = 0

EXPLANATION:

Time Complexity = O (1),since no loop is used
Space Complexity = O (1)