Assignment 2

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Download all Codes from

https://github.com/srikanth2001/EE4013-C_DS/tree/main/Assignment-02/codes

Download all latex-tikz codes from

https://github.com/srikanth2001/EE4013-C_DS/blob/main/Assignment-02/assignment2.tex

1 Problem

By using the concept of equation of a line, prove that the three $\begin{pmatrix}3\\0\end{pmatrix}$,$\begin{pmatrix}-2\\-2\end{pmatrix}$, and $\begin{pmatrix}8\\2\end{pmatrix}$, points are collinear.

2 Solution

if three points to be collinear then the

$$x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2) = 0 \quad (2.0.1)$$

for the given points

$$3(-2 - 2) + (-2)(2 - 0) + 8(0 - (-2)) \quad (2.0.2)$$

$$= 0 \quad (2.0.3)$$

```
#include <stdio.h>
#include <math.h>
#include <stdlib.h>

void collinear(int x1, int y1, int x2,
                    int y2, int x3, int y3)
{
     int a = x1 * (y2 - y3) +
               x2 * (y3 - y1) +
               x3 * (y1 - y2);

     if (a == 0)
          printf("Yes this points are collinear");
     else
          printf("No");
}
int main()
{
     int x1 = 3, x2 = -2, x3 = 8,
          y1 = 0, y2 = -2, y3 = 2;
     collinear(x1, y1, x2, y2, x3, y3);
     return 0;
}
```