SM5083
Assignment No. 02

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SM21MTECH11002

1. CHAPTER III EXAMPLES-4 Q. III

1.1. Problem Statement:Find the diagonals of the parallelogram formed by the lines x-6y=5, x-6y=11, 3x+2y=12, 3x+2y=6
Solution: let

$$L1 = x - 6y - 5 \qquad (1.1.1)$$
$$L2 = x - 6y - 11 \qquad (1.1.2)$$
$$L3 = 3x + 2y - 12 \qquad (1.1.3)$$
$$L4 = 3x + 2y - 6 \qquad (1.1.4)$$

A)Now to find diagonal BD,
It can be found as,

$$L1L4 - L2L3 = 0$$
$$[(x - 6y - 5)(3x + 2y - 6)]-$$
$$[(x - 6y - 11)(3x + 2y - 12)] = 0$$

It gives,
12x+12y-51=0.....(Answer)

Similarly,

B)Now to find diagonal AC,
It can be found as,

$$L1L3 - L2L4 = 0$$
$$[(x - 6y - 5)(3x + 2y - 12)]-$$
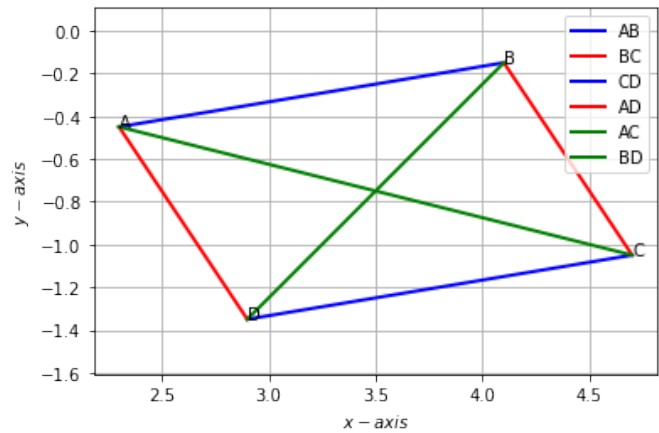$$[(x - 6y - 11)(3x + 2y - 6)] = 0$$

It gives,
x+4y=0......(Answer)

Fig. 1.1. Parallelogram