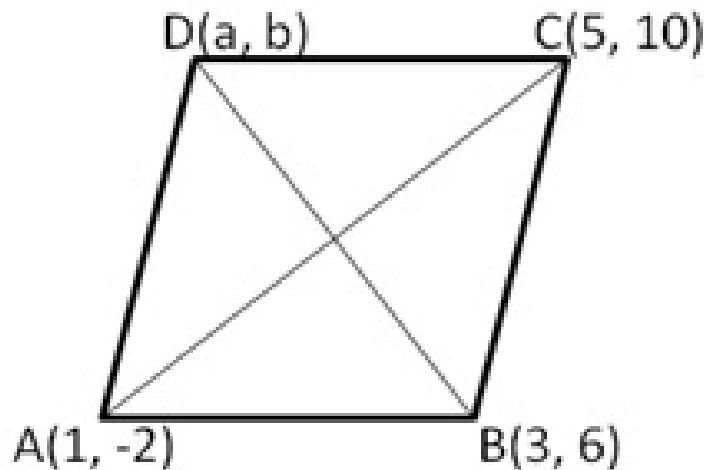Question 26:
Let A(1, -2), B(3, 6) and C(5, 10) are the given vertices of the parallelogram ABCD.

Let D(a, b) be its fourth vertex. Join AC and BD.
Let AC and BD intersect at the point O.
We know that the diagonals of a parallelogram bisect each other.
So, O is the midpoint AC as well as that of BD

Midpoint of AC is $\left(\dfrac{1+5}{2}, \dfrac{-2+10}{2}\right)$ i.e., $(3, 4)$

Midpoint of BD is $\left(\dfrac{3+a}{2}, \dfrac{6+b}{2}\right)$

$\dfrac{3+a}{2} = 3$ and $\dfrac{6+b}{2} = 4$

$\Rightarrow a = 3$ and $b = 2$

Hence the fourth vertices is D(3, 2).

********** END *********