**Change of Axes**

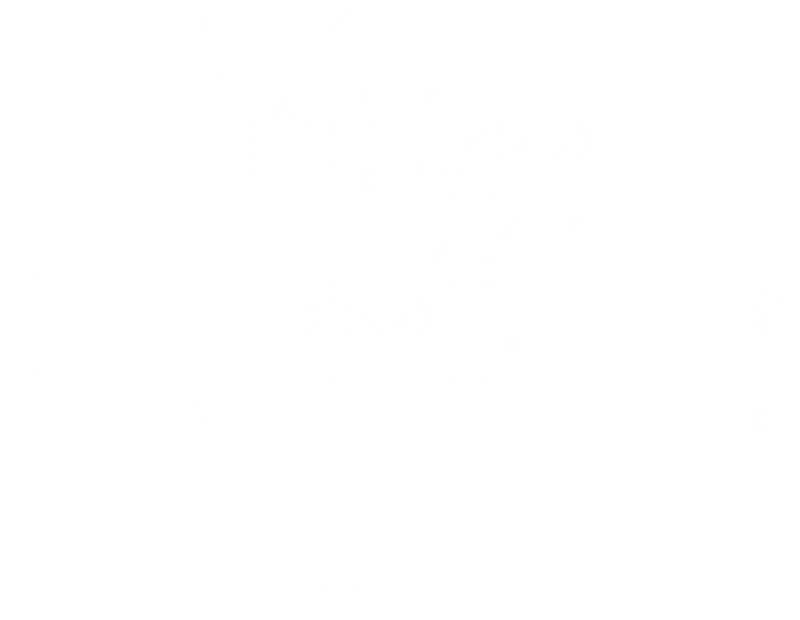
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## Change of Origin

The co-ordinates of a point will change if the origin is shifted to a new point , where the direction of the axes remains the same.



Example sum: Find new equation when origin is shifted.

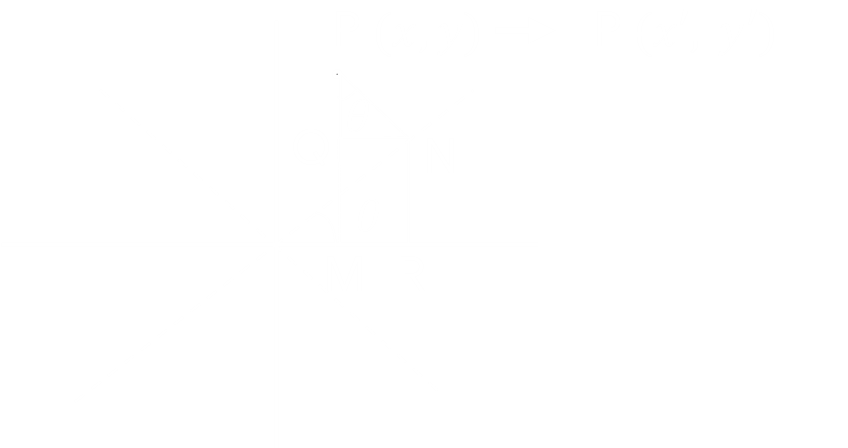
Solution: Must substitute with and with .

## Rotation of Axes

The co-ordinates of a point will change if the direction of axes is turned through an angle , whereas the origin remains the same.

|  |  |  |
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Proof:



Special Case: The term in the equation is removed if the axes is rotated through an angle .