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 ASSIGNMENT

If A and B are the points (5,3) and (15,-7) respectively. Find the coordinates of the point which divides AB externally in the ratio 3:1

 SOLUTION

Let C be the point that divides the line AB

Let (x.y) be the required coordinates of c. Since C divides the line-segment AB externally in the ratio 3:1 hence;

 X=(5,15) y=(3,-7)

To get the co-ordinate of c we use this formula;

 P = {($mx\_{2}-nx\_{1}$)/(m-n), ($my\_{2}-ny\_{1}$)/(m-n)}

 Where x = $\frac{mx\_{2}-nx\_{1}}{m-n}$

 And y = $\frac{my\_{2}-ny\_{1}}{m-n}$

 $x\_{1}=5$ $x\_{2}=15$

 $y\_{1}=3$ $y\_{2}=-7$

 m = 3 n = 1

substituting the values; $x=\frac{\left(3×15\right)-(1×5)}{3-1}$ = $\frac{45-5}{2}$ = $\frac{40}{2}$ = 20

 $y=\frac{(3×\left(-7\right)-(1×3)}{3-1}$ = $\frac{-21-3}{2}$ = $\frac{-24}{2}$ = -12

Therefore the co-ordinates of the point C that divides AB externally are (20, -12 )