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## COVID-19 HOLIDAY ASSIGNMENT

## QUESTION

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

$\frac{\mathrm{AP}}{\mathrm{BP}}=\frac{\lambda}{\mu}=\frac{3}{1}$
By Similar Triangles
$\frac{\mathrm{AQ}}{\mathrm{BS}}=\frac{\lambda}{\mu}$
$\Rightarrow \frac{x-5}{x-15}=\frac{3}{1}$
$(x-5) 1=3(x-15)$
$x-5=3 x-45$
$45-5=3 x-x$
$40=2 x$
$x=\frac{40}{2}$
$\therefore x=20$
Also
$\frac{\mathrm{PQ}}{\mathrm{PS}}=\frac{\lambda}{\mu}$
$\Rightarrow \frac{y-3}{y+7}=\frac{3}{1}$
$1(y-3)=3(y+7)$
$y-3=3 y+21$
$-21-3=3 y-y$
$-24=2 y$
$y=\frac{-24}{2}$
$\therefore y=-12$
$\therefore$ The co-ordinates of the point P is $(20,-12)$ would divide AB externally into ratio $3: 1$

