

19. The diagram shows vectors \mathbf{OA} , \mathbf{OB} and \mathbf{OC} .

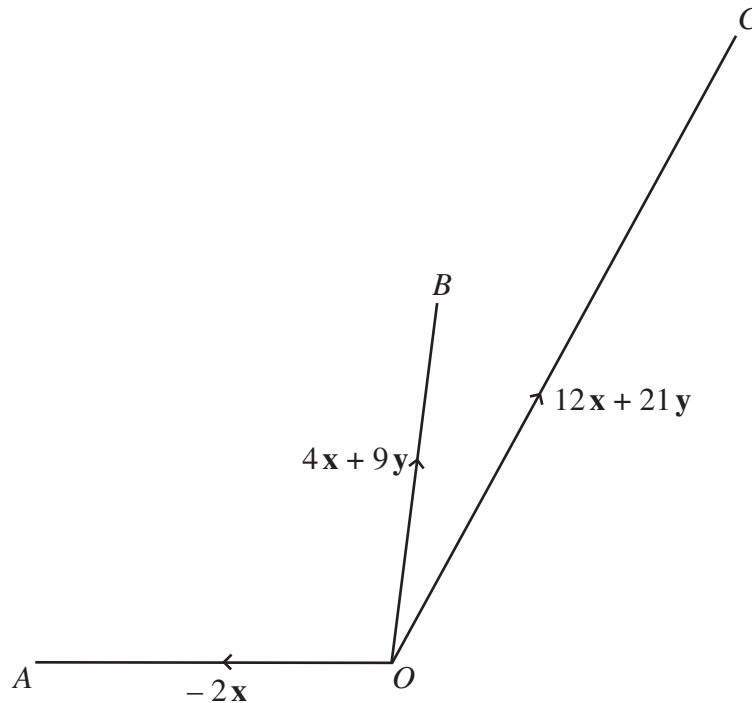


Diagram not drawn to scale.

You are given that $\mathbf{OA} = -2\mathbf{x}$, $\mathbf{OB} = 4\mathbf{x} + 9\mathbf{y}$ and $\mathbf{OC} = 12\mathbf{x} + 21\mathbf{y}$.
Show that the points A , B and C lie on a straight line and find the ratio $AB : BC$.

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