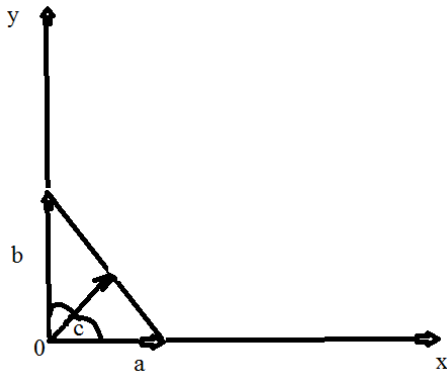


### Answer on Question #63660-Physics-Mechanics-Relativity

Three particles A, B and C start from origin at same time A with velocity  $a$  along  $x$ - axis, B with velocity  $b$  along  $y$  axis and C with velocity  $c$  in  $X$ - $Y$  plane along line  $x=y$ . the magnitude of  $c$  so that three are always collinear is?

#### Solution



$c$  is the bisector of triangle:

$$c = \frac{\sqrt{ab((a+b)^2 - (a^2 + b^2))}}{a+b} = \frac{\sqrt{ab((a^2 + b^2 + 2ab) - (a^2 + b^2))}}{a+b} = \frac{\sqrt{ab(2ab)}}{a+b} = \frac{\sqrt{2}ab}{a+b}$$

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