

Physics

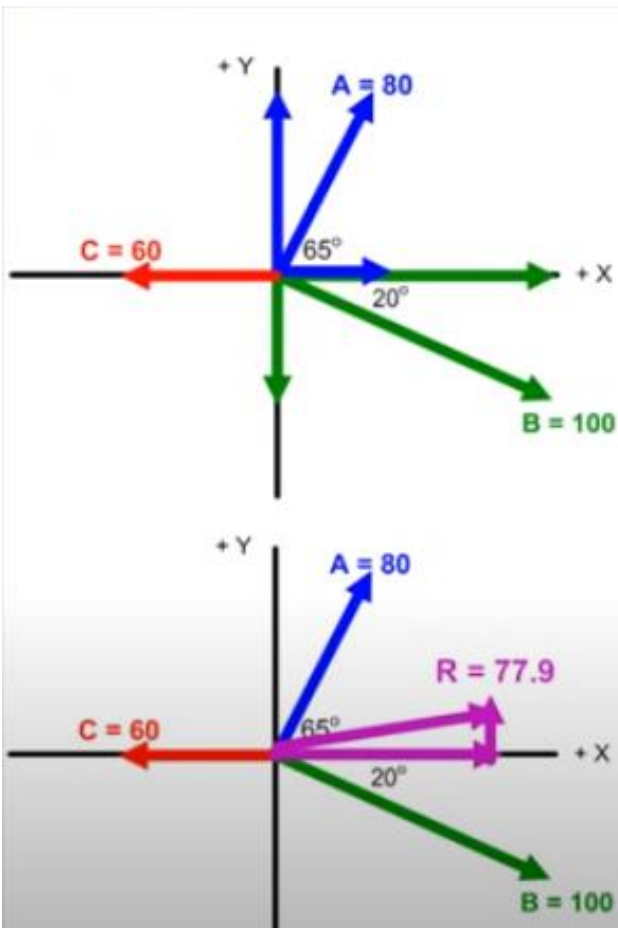
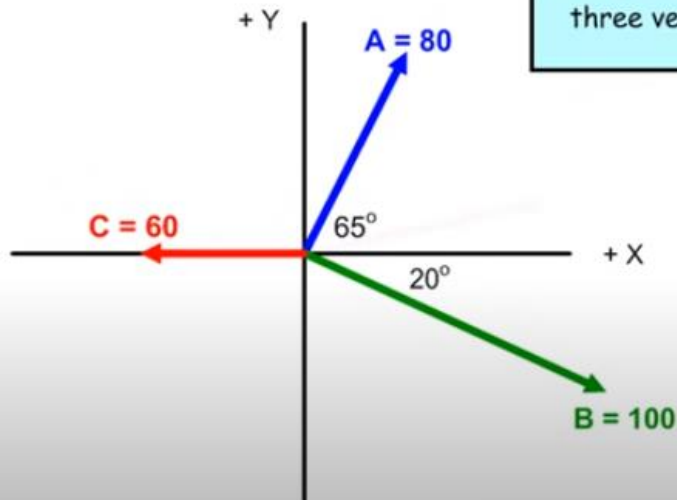
Instructor: Mr. Butler

Resource Doc

Resultant by Component Method

Finding Resultants

What is the resultant of these three vectors?



	A	B	C	
$\Sigma X =$	$80\cos 65$	$+ 100\cos 20$	$+ 60$	$=$
$\Sigma X =$	33.8	+ 94.0	+ 60	$= 67.8$
$\Sigma Y =$	$80\sin 65$	$+ 100\sin 20$	$+ 0$	$=$
$\Sigma Y =$	72.5	+ 34.2	+ 0	$= 38.3$

$$R = \sqrt{X^2 + Y^2}$$
$$R = \sqrt{67.8^2 + 38.3^2} = 77.9$$

$$\tan \theta = \frac{Y}{X} = \frac{38.3}{67.8}$$
$$\theta = \tan^{-1} \frac{38.3}{67.8} = 29.5^\circ$$

R = 77.9 at 29.5° North of East
or 29.5° above the X axis