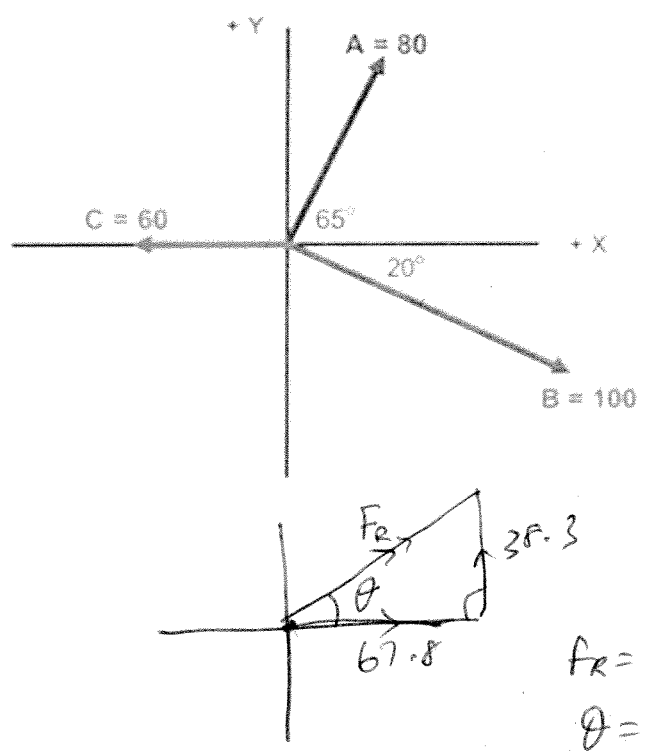


1. Find the resultant (sum) of the following 3 vectors shown below.
 Need help, watch this video: https://www.youtube.com/watch?v=g_TnqKX5ybY



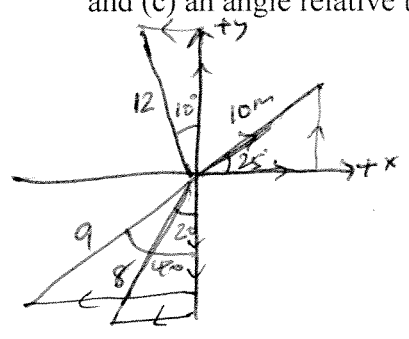
77.85 @ 29.5°

	x-comp	y-comp
A	$80 \cos 65^\circ$	$80 \sin 65^\circ$
B	$100 \cos 20^\circ$	$-100 \sin 20^\circ$
C	-60	0
Sum	67.8	38.3

$$R = \sqrt{67.8^2 + 38.3^2} = 77.8$$

$$\theta = \tan^{-1}\left(\frac{38.3}{67.8}\right) = 29.5^\circ$$

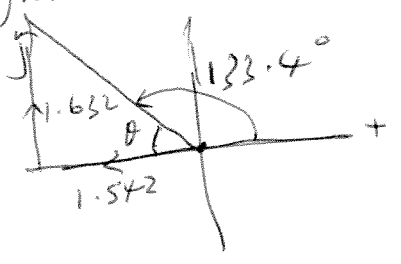
2. Find the sum of the following four vectors in (a) unit-vector notation, and as (b) a magnitude and (c) an angle relative to +x.



- \vec{P} : 10.0 m, at 25.0° counterclockwise from +x
- \vec{Q} : 12.0 m, at 10.0° counterclockwise from +y
- \vec{R} : 8.00 m, at 20.0° clockwise from -y
- \vec{S} : 9.00 m, at 40.0° clockwise from -y

x	y
9.063	4.226
-2.084	11.818
-2.736	-7.518
-5.785	-6.894
<hr/>	<hr/>
-1.542	1.632

(a) $(-1.542 \hat{i} + 1.632 \hat{j}) \text{ m}$
 $(-1.54 \text{ m}) \hat{i} + (1.63 \text{ m}) \hat{j}$



(b) mag. = 2.245 m
 $\tan \theta = \frac{1.632}{1.542} = 1.0584$
 $\theta = 46.6^\circ$
 angle relative to +x: $180 - 46.6 = \underline{\underline{133.4^\circ}}$