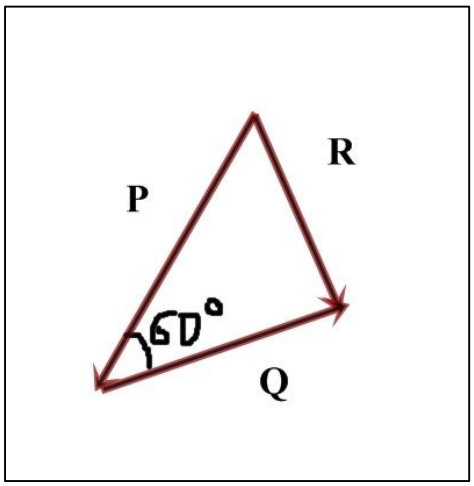
Answer on Question #45140, Physics, Other

Task: Let vector P & Q is 4 & 3cm respectively angle between them is 60 degree find R using
i)triangle method by constructing a triangle.
ii)parallelogram method by constructing a parallelogram.
iii)by calculation

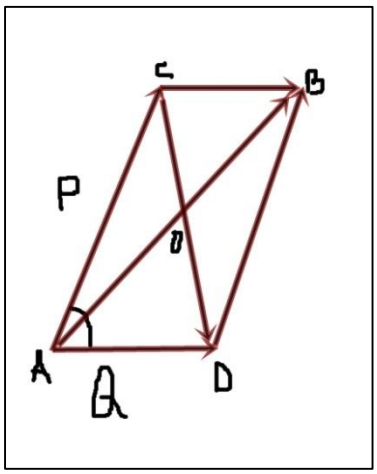
Solution:

i)triangle method by constructing a triangle.



$$\vec{P}+\vec{Q}=\vec{R}=4+3=7cm$$

ii)parallelogram method by constructing a parallelogram.



$$\vec{P}+\vec{Q}=\overrightarrow{AB}=4+3=7cm \Rightarrow \overrightarrow{OB}=0.5\overrightarrow{AB}=\frac{7}{2};$$

$$\overrightarrow{CD}=R=7.$$

iii)by calculation

$$R^2=P^2+Q^2-2PQ\cos 60^0=13 \Rightarrow R=\sqrt{13}$$