Oct 8, 2020

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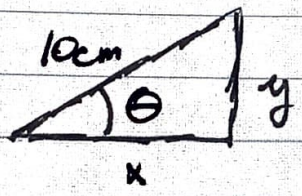
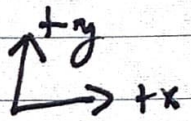
Q1:

a) the sum of the 12 vectors is 0. each vector has the same magnitude (the radius of the circle) and each vector has a coorespondng opposite vector, which cancels it out

b) All the vectors besides the 8:00 vector continue to cancel out. So the result will just be the 8:00 vector.

c) 






θ is given by $\frac{1}{3}$ of a quarter revolution.

$\theta = 30°$

$X = 10 \cos\theta$ $\quad Y = 10 \sin\theta$

$X = 10 \cdot \frac{\sqrt{3}}{2}$ $\quad Y = 10\,(0.5)$

$X = 8.66\text{cm}$ $\quad Y = 5\text{cm}$