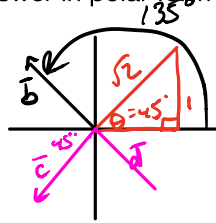


V2 - Component to Polar (Special Right Triangles)

Given a vector in component form, find the vector's magnitude and direction (using an angle in standard position) and write the answer in polar form (magnitude, angle)

1.

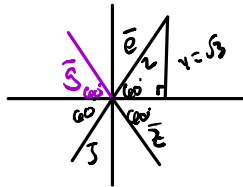
$$\begin{aligned} \vec{a} &= \langle 1, 1 \rangle \\ \vec{b} &= \langle -1, 1 \rangle \\ \vec{c} &= \langle -1, -1 \rangle \\ \vec{d} &= \langle 1, -1 \rangle \end{aligned}$$



$$\begin{aligned} \vec{a} &= (\sqrt{2}, 45^\circ) \\ \vec{b} &= (\sqrt{2}, 135^\circ) \\ \vec{c} &= (\sqrt{2}, 225^\circ) \\ \vec{d} &= (\sqrt{2}, 315^\circ) \end{aligned}$$

2.

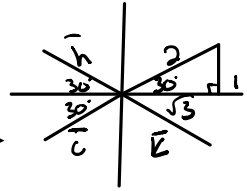
$$\begin{aligned} \vec{e} &= \langle 1, \sqrt{3} \rangle \\ \vec{g} &= \langle -1, \sqrt{3} \rangle \\ \vec{j} &= \langle -1, -\sqrt{3} \rangle \\ \vec{z} &= \langle 1, -\sqrt{3} \rangle \end{aligned}$$



$$\begin{aligned} \vec{e} &= (2, 60^\circ) \\ \vec{g} &= (2, 120^\circ) \\ \vec{j} &= (2, 240^\circ) \\ \vec{z} &= (2, 300^\circ) \end{aligned}$$

3.

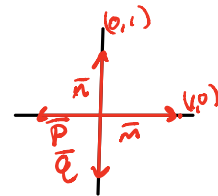
$$\begin{aligned} \vec{f} &= \langle \sqrt{3}, 1 \rangle \\ \vec{h} &= \langle -\sqrt{3}, 1 \rangle \\ \vec{i} &= \langle -\sqrt{3}, -1 \rangle \\ \vec{k} &= \langle \sqrt{3}, -1 \rangle \end{aligned}$$



$$\begin{aligned} \vec{f} &= (2, 30^\circ) \\ \vec{h} &= (2, 150^\circ) \\ \vec{i} &= (2, 210^\circ) \\ \vec{k} &= (2, 330^\circ) \end{aligned}$$

4.

$$\begin{aligned} \vec{m} &= \langle 1, 0 \rangle \\ \vec{n} &= \langle 0, 1 \rangle \\ \vec{p} &= \langle -1, 0 \rangle \\ \vec{q} &= \langle 0, -1 \rangle \end{aligned}$$



$$\begin{aligned} \vec{m} &= (1, 0^\circ) \\ \vec{n} &= (1, 90^\circ) \\ \vec{p} &= (1, 180^\circ) \\ \vec{q} &= (1, 270^\circ) \end{aligned}$$