

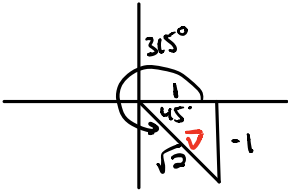
V3 - Polar to Component (Special Right Triangles)

Given a vector in polar form, find the vector's component form.

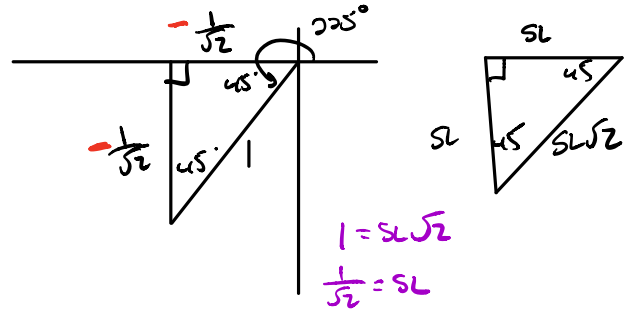
1. $\vec{v} = (\sqrt{2}, 315^\circ)$

$(\|\vec{v}\|, \theta)$

$\vec{v} = \langle 1, -1 \rangle$



3. $\vec{w} = (1, 225^\circ)$



$1 = s\sqrt{2}$
 $\frac{1}{\sqrt{2}} = s$

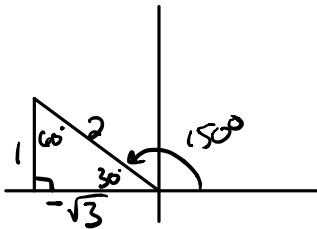
$\vec{w} = \langle -\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}} \rangle$

$\vec{w} = \langle -\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2} \rangle$

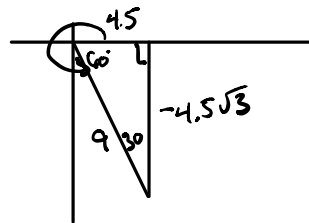
$\frac{-1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{-\sqrt{2}}{2}$

2. $\vec{u} = (2, 150^\circ)$

$\vec{u} = \langle -\sqrt{3}, 1 \rangle$



4. $\vec{s} = (9, 300^\circ)$



$\vec{s} = \langle 4.5, -4.5\sqrt{3} \rangle$