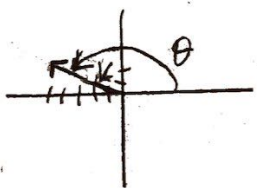


Warmup #9: Trig Form

1. Write in trig form: $\vec{k} = -5i + 2j$ ← sum of unit vector form



$$\|\vec{k}\| (\cos \theta i + \sin \theta j)$$

$$\boxed{\sqrt{29} (\cos 158.2^\circ i + \sin 158.2^\circ j)}$$

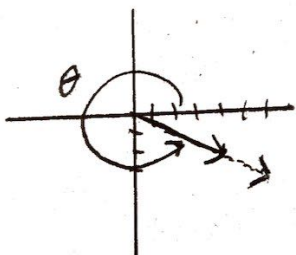
$$\|\vec{k}\| = \sqrt{(-5)^2 + (2)^2} = \sqrt{25+4} = \sqrt{29}$$

$$\theta = \tan^{-1}\left(\frac{2}{-5}\right)$$

$$\theta = -21.8$$

$$180 - 21.8 = 158.2^\circ$$

2. Find the vector v with $\|v\| = 7$ and in the same direction as $u = 4i - 2j$.



$$\theta = \tan^{-1}\left(\frac{-2}{4}\right)$$

$$\theta = -26.57^\circ$$

$$360 - 26.57^\circ = 333.43^\circ$$

$$\|\vec{u}\| (\cos \theta i + \sin \theta j)$$

$$7 (\cos 333.43^\circ i + \sin 333.43^\circ j)$$

$$\boxed{6.26i - 3.13j}$$