

$$\|\vec{v}\| = \sqrt{x^2 + y^2}$$

$$\tan \theta' = \frac{y}{x}$$

Warmup #3: Magnitude & Direction

Find the magnitude (simplified radical) and the direction (nearest degree) for $v = \langle 2, -3 \rangle$.

magnitude: $\|\vec{v}\| = \sqrt{2^2 + (-3)^2} = \sqrt{4+9} = \boxed{\sqrt{13}}$

direction:

$$\tan \theta' = -\frac{3}{2}$$

$$\theta' = \tan^{-1} -\frac{3}{2}$$

$$\theta' = -56.3^\circ = 56.3$$

$$\theta = 360 - 56.3$$

$$\theta = \boxed{304^\circ}$$

