

**Exercise 1** Find the unit vector  $\hat{\mathbf{u}}$  in the first quadrant of  $\mathbb{R}^2$  that makes an angle of  $5\pi/18$  radians with the  $x$ -axis.

$$\hat{\mathbf{u}} = \left\langle \cos\left(\frac{5\pi}{18}\right), \sin\left(\frac{5\pi}{18}\right) \right\rangle$$

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