

$$\cos^2(\theta) = 1 - \left(\frac{y}{r}\right)^2 = \left(\frac{x}{r}\right)^2$$

$\cos(\alpha) = \frac{b}{a} = \frac{12}{13}$   
 $\sin(\alpha) = \frac{5}{13} = \frac{1}{2}$

$\cos(225^\circ) = -\frac{\sqrt{2}}{2}$   
 $\sin(225^\circ) = -\frac{\sqrt{2}}{2}$   
 $\theta = 225^\circ$   
 $r = 4\sqrt{2}$

$$t = 35^\circ \times \frac{\pi}{180} = \frac{35\pi}{180}$$

$$v(t) = \frac{\sqrt{357}}{\sqrt{24}} = \frac{6}{\sqrt{24}}$$

$\vec{a} = \cos(\theta) \hat{i} + \sin(\theta) \hat{j}$   
 $\vec{b} = \cos(\phi) \hat{i} + \sin(\phi) \hat{j}$   
 $\vec{a} \cdot \vec{b} = \cos(\theta)\cos(\phi) + \sin(\theta)\sin(\phi)$   
 $\cos(\theta - \phi) = \cos(\theta)\cos(\phi) + \sin(\theta)\sin(\phi)$   
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