

**PROB:** Given

$$v(t) = \cos(2\pi ft) + 3\sqrt{2} \cos(2\pi ft + 45^\circ),$$

use phasor transforms, denoted by  $P[ ]$  below, to find an expression for  $v(t)$  in polar form:

$$v(t) = A \cos(2\pi ft + \phi).$$

That is, use phasors to complete the following calculations and find the values of  $A$  and  $\phi$ .

$$P[\cos(2\pi ft)] = \underline{\hspace{4cm}}$$

$$P[3\sqrt{2} \cos(2\pi ft + 45^\circ)] = \underline{\hspace{4cm}} \text{ (use rectangular, } a+jb, \text{ form)}$$

$$\text{sum of above two phasors} = \underline{\hspace{4cm}} \text{ (use rectangular, } a+jb, \text{ form)}$$

$$\text{sum in polar, } Ae^{j\phi}, \text{ form} = \underline{\hspace{4cm}}$$

$$A = \underline{\hspace{2cm}} \quad \phi = \underline{\hspace{2cm}}$$