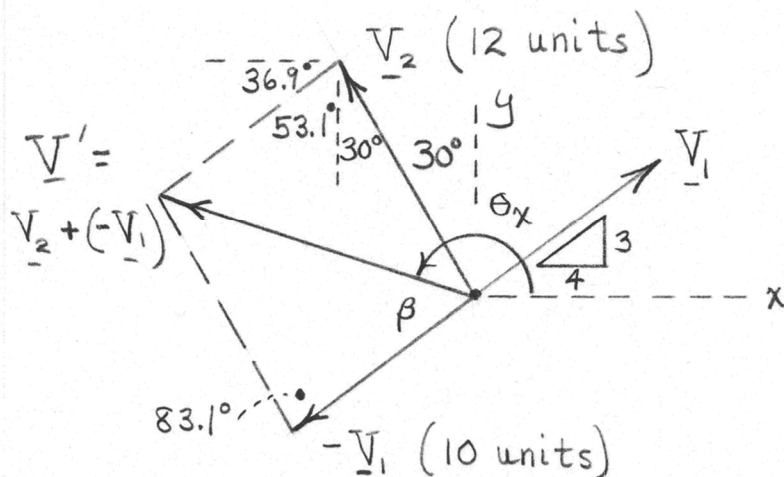


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Graphically, $\underline{V}' = 14.7$ units, $\theta_x = 163^\circ$

Algebraically, $V'^2 = 10^2 + 12^2 - 2(10)(12)\cos 83.1^\circ$
 $\underline{V}' = 14.67$ units

$$\frac{\sin \beta}{12} = \frac{\sin 83.1^\circ}{14.67}, \quad \beta = 54.3^\circ$$

$$\theta_x = (180^\circ + 36.9^\circ) - \beta = 180^\circ + 36.9^\circ - 54.3^\circ$$

$$= \underline{162.6^\circ}$$