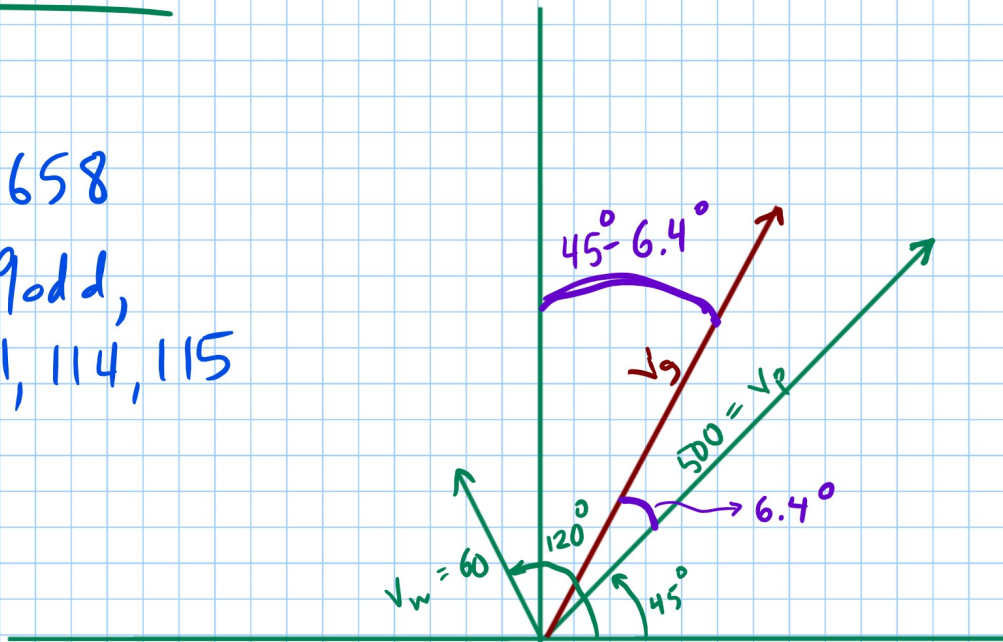


p637 25

p656-658

55-69 odd,
89, 91, 114, 115



518.9 km/hr
bearing of
 $N38.6^\circ E$

$$v_p = 500 (\cos 45^\circ i + \sin 45^\circ j) = 353.6i + 353.6j$$

$$v_w = 60 (\cos 120^\circ i + \sin 120^\circ j) = -30i + 52.0j$$

$$v_g = v_p + v_w = 323.6i + 405.6j$$

$$\|v_g\| = \sqrt{323.6^2 + 405.6^2} = 518.9 \text{ km/hr}$$

angle between v_p and v_g

$$\cos \theta = \frac{v_p \cdot v_g}{\|v_p\| \cdot \|v_g\|} = \frac{257845.12}{500 \cdot 518.9}$$

$$\theta = \cos^{-1} \left(\frac{257845.12}{500 \cdot 518.9} \right) \approx 6.4^\circ$$

$$v_p \cdot v_g = 353.6 \cdot 323.6 + 353.6 \cdot 405.6 = 257845.12$$