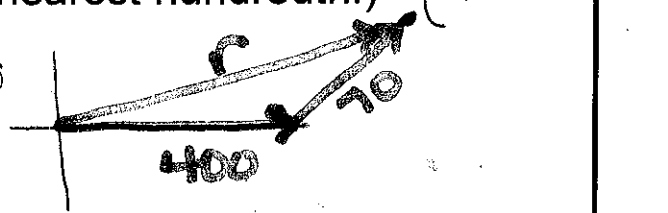
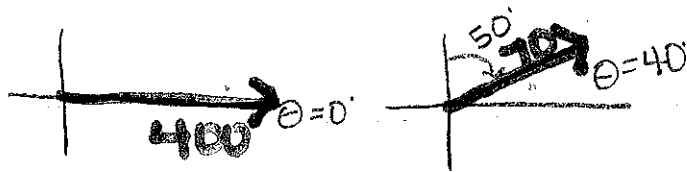


Warmup #11: Vector Applications

An airplane is traveling due east at a speed of 400 mph. The wind blows at 70 mph at an angle of N50°E. (Round to the nearest hundredth.)



$$\vec{r} = 400\langle \cos 0^\circ, \sin 0^\circ \rangle + 70\langle \cos 40^\circ, \sin 40^\circ \rangle$$

$$\langle 453.62, 45.00 \rangle$$

$$\|\vec{r}\| = \sqrt{453.62^2 + 45^2}$$

$$= 455.85 \text{ mph}$$

(453.62, 45)