Set up the coordinate axes so that north is the positive y -direction, and east is the positive x -direction. The wind is blowing at 50 km/ h from the direction N45°W , so that its velocity vector is 50 km/h S45°E , which can be written as $\mathbf{v}_{\text{wind}} = 50(\cos(45°)\,\mathbf{i} - \sin(45°)\,\mathbf{j})$. With respect to the still air, the velocity vector of the plane is 250 km/h N 60°E , or equivalently $\mathbf{v}_{\text{plane}} = 250(\cos(30°)\,\mathbf{i} + \sin(30°)\,\mathbf{j})$. The velocity of the plane relative to the ground is

$$\begin{aligned}\mathbf{v} &= \mathbf{v}_{\text{wind}} + \mathbf{v}_{\text{plane}} \\ &= (50\cos(45°) + 250\cos(30°))\,\mathbf{i} + (-50\sin(45°) + 250\sin(30°))\,\mathbf{j} \\ &= \left(25\sqrt{2} + 125\sqrt{3}\right)\mathbf{i} + \left(125 - 25\sqrt{2}\right)\mathbf{j} \approx 251.9\,\mathbf{i} + 89.6\,\mathbf{j}\end{aligned}$$

The ground speed is $|\mathbf{v}| \approx \sqrt{(251.9)^2 + (89.6)^2} \approx 267.4$ km/h . The angle the velocity vector makes with the x -axis is $\theta \approx \arctan\left(\frac{89.6}{251.9}\right) \approx 19.6°$. Therefore, the true course of the plane is about
$\mathrm{N}(90 - 19.6)°\mathrm{E} = \mathrm{N}\,70.4°\mathrm{E}$.