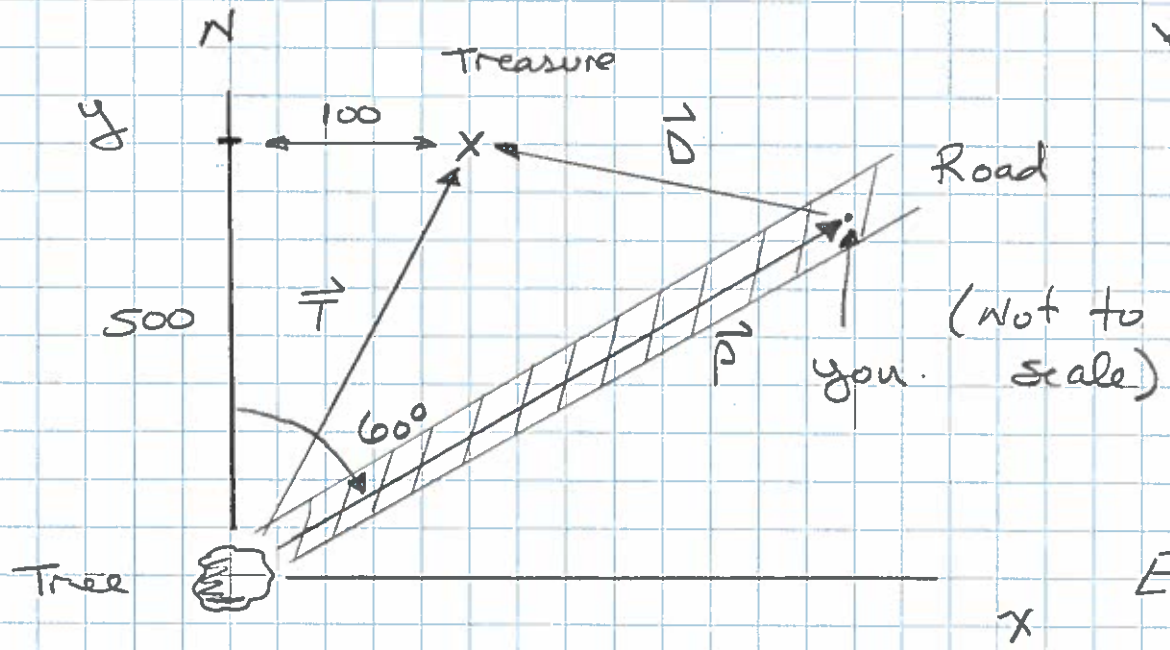


Let: $\vec{T}$ = Vector from tree to treasure

$= 100\hat{i} + 500\hat{j}$ paces

$\vec{P}$ = Vector along road from tree to you.

$= (300, 60° \text{ from } N)$

$= 300\sin 60°\,\hat{i} + 300\cos 60°\,\hat{j}$ paces

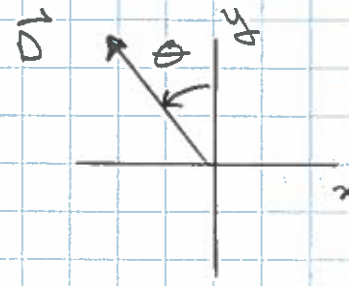
$\vec{D}$ = Vector from you to treasure

from diagram: $\vec{P} + \vec{D} = \vec{T}$

So, $\vec{D} = \vec{T} - \vec{P} = (100 - 300\sin 60°)\hat{i} + (500 - 300\cos 60°)\hat{j}$

$= -159.8\,\hat{i} + 350\,\hat{j}$ paces.

So: $|\vec{D}| = \sqrt{D_x^2 + D_y^2} = 384.8$ paces



$\theta = \tan^{-1}\left(\frac{|D_x|}{|D_y|}\right) = 24.54°$ from +y.

∴ walk 384.8 paces 24.54° W of N