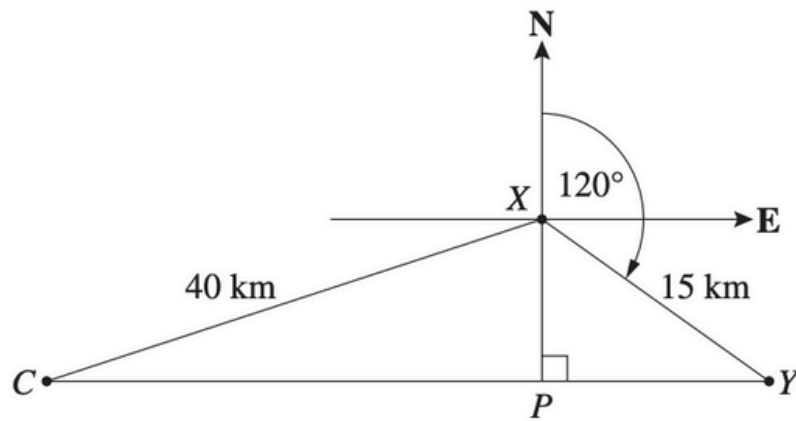


The diagram shows the location of three places X , Y and C .

Y is on a bearing of 120° and 15 km from X .

C is 40 km from X and lies due west of Y .

P lies on the line joining C and Y and is due south of X .



NOT TO SCALE

(a) Find the distance from X to P .

.....

Tips

1. Identify the Angle in Triangle PXY

- Recognize that $\angle PXY$ is supplementary to the bearing of 120° , so calculate $\angle PXY = 180^\circ - 120^\circ$.

2. Use the Cosine Ratio

- In triangle PXY , XP is adjacent to $\angle PXY$, and XY is the hypotenuse.
- Use the cosine ratio: $\cos(\theta) = \frac{\text{adjacent}}{\text{hypotenuse}}$. Rearrange to find XP :

$$XP = XY \times \cos(\angle PXY)$$

3. Substitute Known Values

- Substitute $XY = 15$ km and $\cos(60^\circ) = 0.5$ to calculate XP .

[Link to NESAs Marking Guidelines and Sample Answer](#)