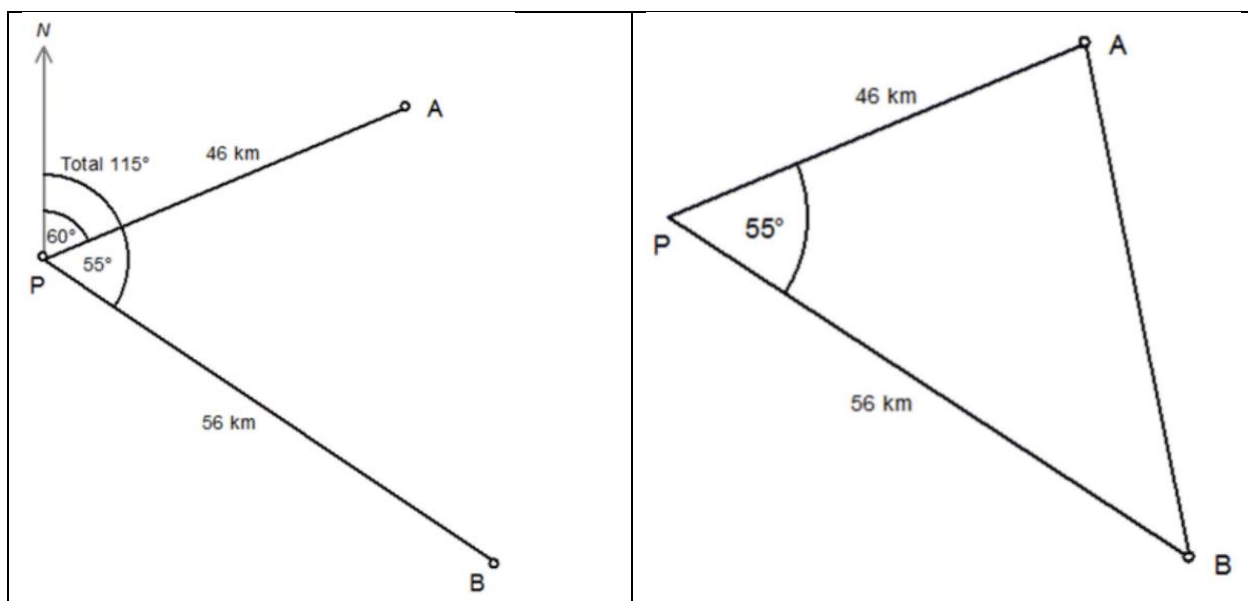


Exercise: Two ships leave port at 10:00 and each one continue on a straight-line course. Ship A travels on a bearing of 060(N60E) at a speed of 23 km/h, and ship B travels on a bearing of 115(E25S) at a speed of 28 km/h.

How far away are the ships from each other at 12:00, assuming no changes of course and speed ?



Solution:

We have two sides and the included angle given in the triangle PAB, and so we can find the distance **AB** using the cosine rule:

$$(AB)^2 = (AP)^2 + (PB)^2 - 2(AP)(PB) \cos 55^\circ$$

This gives $(AB)^2 = 2116 + 3136 - 5152 \cos 55^\circ$ or 2296.9, and hence **AB** = 47.9 km to 3 s.f.