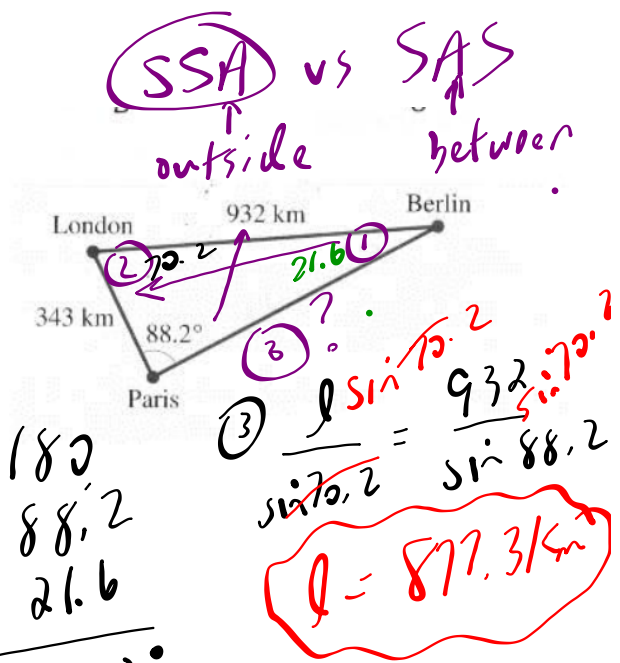


HW ???

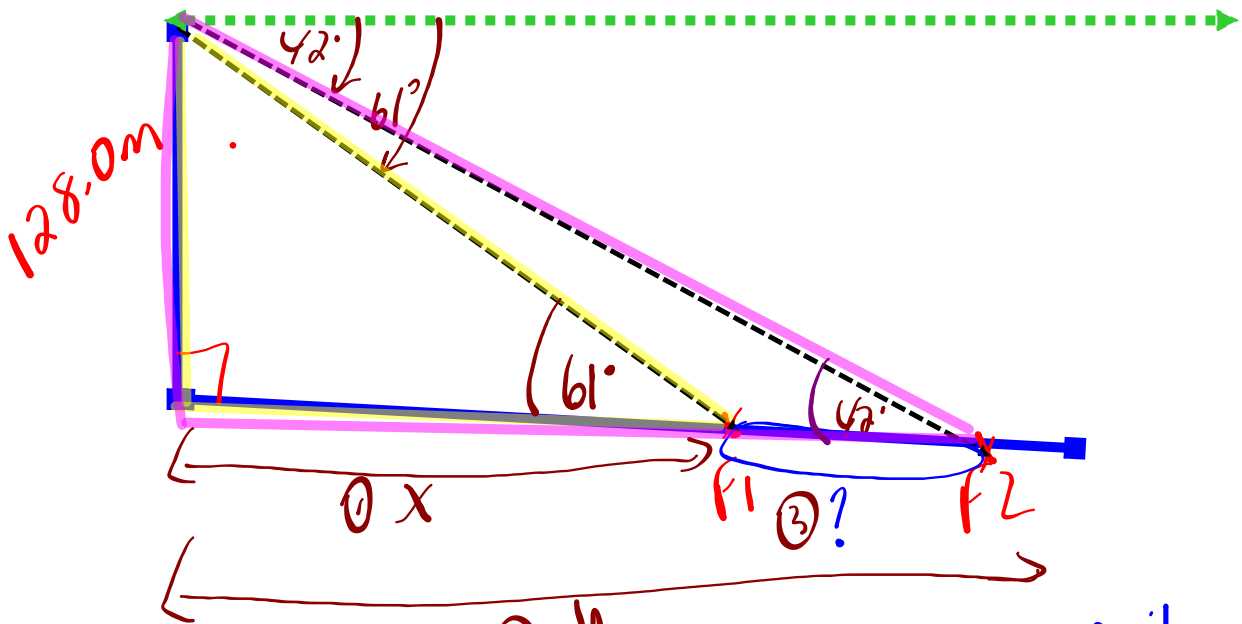
4. Find the distance from Paris to Berlin in the following diagram...



①  $\frac{\sin B}{343} = \frac{\sin 88.2}{932}$   
 $\sin B = (0.3678)$   
 $\angle B = 21.6^\circ$

② 
$$\begin{array}{r} 180 \\ - 88.2 \\ - 21.6 \\ \hline \angle L = 70.2^\circ \end{array}$$

7. A forest ranger in a tower 128.0 m high sights two fires in the same line of sight with angles of depression  $42^\circ$  and  $61^\circ$ .  
**How far apart are the fires?**



①  $\tan 61^\circ = \frac{128}{x}$

$x = \frac{128}{\tan 61}$

$x = 70.95$

②  $\tan 42^\circ = \frac{128}{y}$

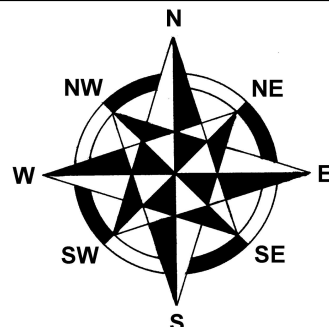
$y = \frac{128}{\tan 42}$

$y = 142.16$

③ Dist  
 $= 142.16$   
 $- 70.95$   
71.2m

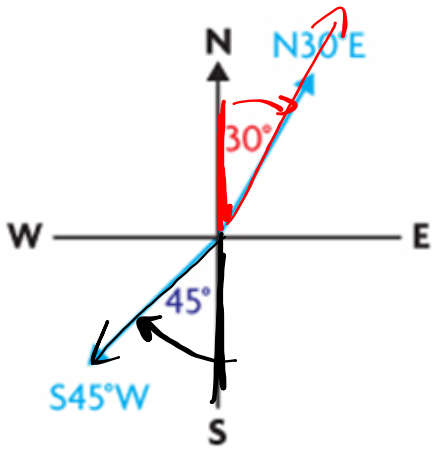
# MORE APPLICATIONS... Bearings

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**Communication | Tip**

Directions are often stated in terms of north and south on a compass. For example, **N30°E** means travelling in a direction 30° east of north. S45°W means travelling in a direction 45° west of south.



ex

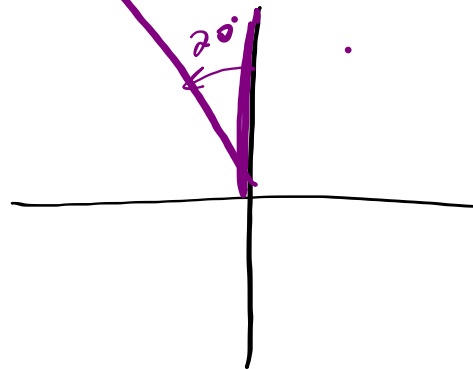
N 30° E

30° East of North



ex

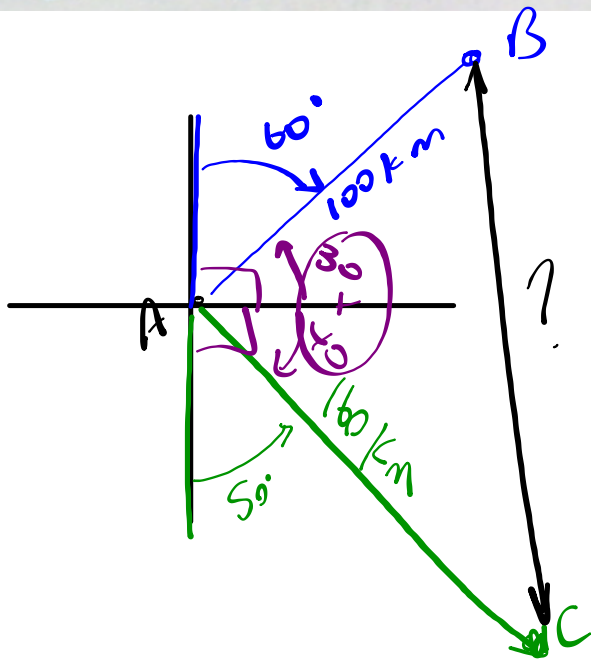
N 20° W



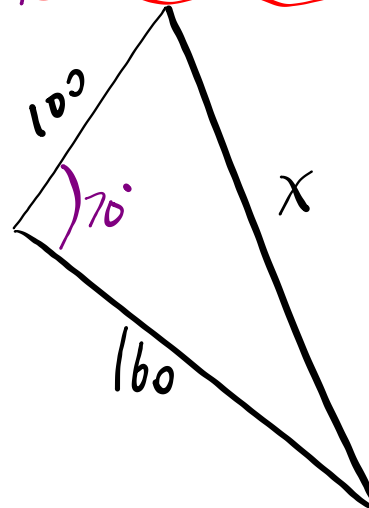
Booklet Questions... 10.12: #8, 9, 11, 12

Let's do #8 TOGETHER...

8 In an airport control tower A, 2 planes at B and C are located at the same altitude on a radar screen. The range finder determines one plane to bear  $N60^\circ E$  at 100 km while the other bears  $S50^\circ E$  at 160 km. How far apart are the planes from each other?



$$a^2 = b^2 + c^2 - 2bc \cos A$$



$$x^2 = 100^2 + 160^2 - 2(100)(160)\cos 70^\circ$$

$$x \sim \begin{matrix} 100^2 + 160^2 - 2 * 100 * \\ 160 * \cos(70) \\ 24655.35541 \\ \sqrt{\text{Ans}} \\ 157.0202389 \\ \blacksquare x = \\ x = 157.0 \text{ km} \end{matrix}$$