

# HW Questions...

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

$$\textcircled{1} \frac{\sin B}{343} = \frac{\sin 88.2}{932}$$

$$\sin^{-1} \sin B = (0.3678)$$

$$\angle B = 21.6^\circ$$

SSA vs SAS

outside vs between

Law of Sines

London 932 km Berlin

343 km 88.2°

Paris

②

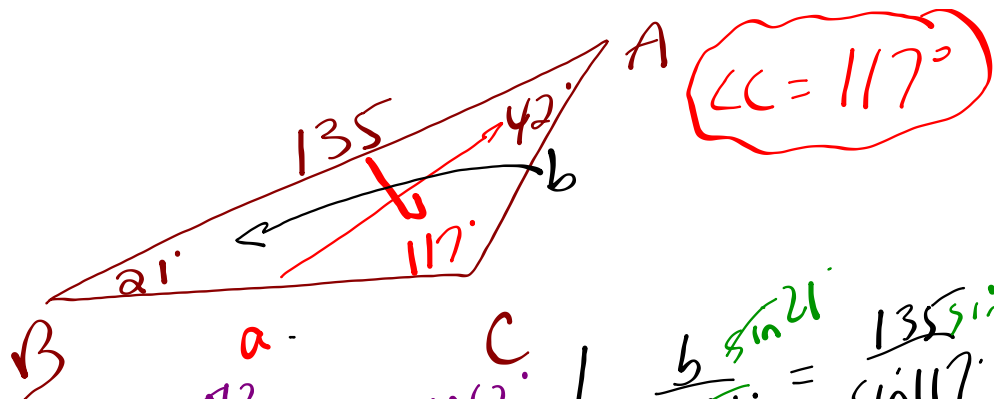
$$\begin{array}{r} 180 \\ - 88.2 \\ - 21.6 \\ \hline \end{array}$$

LL = 70.2

③  $\frac{x}{\sin 70.2} = \frac{932}{\sin 88.2}$

$x = 877.3 \text{ km}$

3b)



$$\frac{a \sin 42^\circ}{\sin 21^\circ} = \frac{135 \sin 42^\circ}{\sin 117^\circ}$$

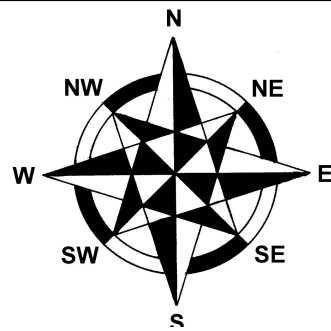
$$a = 101.4$$

$$\frac{b \sin 21^\circ}{\sin 117^\circ} = \frac{135 \sin 21^\circ}{\sin 117^\circ}$$

$$b = 54.3$$

# MORE APPLICATIONS... Bearings

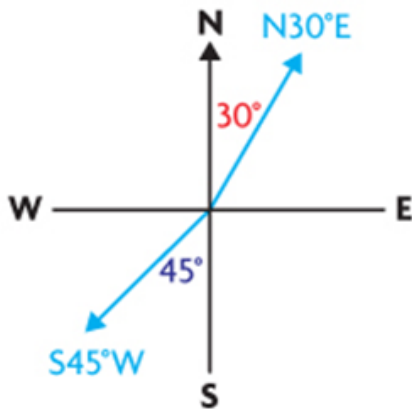
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**NOTE:**

**Communication Tip**

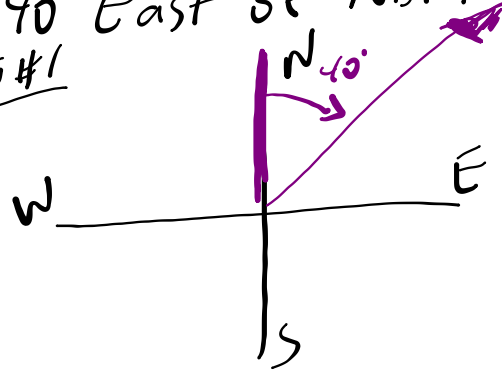
Directions are often stated in terms of north and south on a compass. For example,  $N30^{\circ}E$  means travelling in a direction  $30^{\circ}$  east of north.  $S45^{\circ}W$  means travelling in a direction  $45^{\circ}$  west of south.



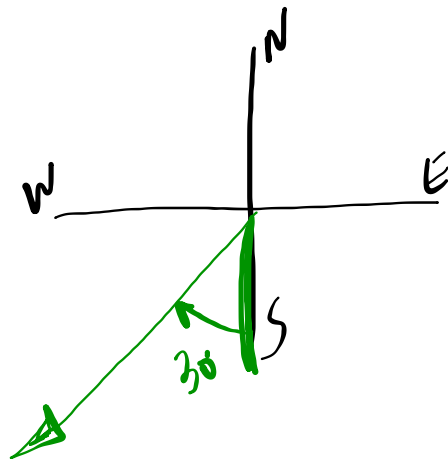
Bearing ... Direction

$N 40^{\circ} E$

"40° East of North"  
ex #1



ex #2  $S 30^{\circ} W$

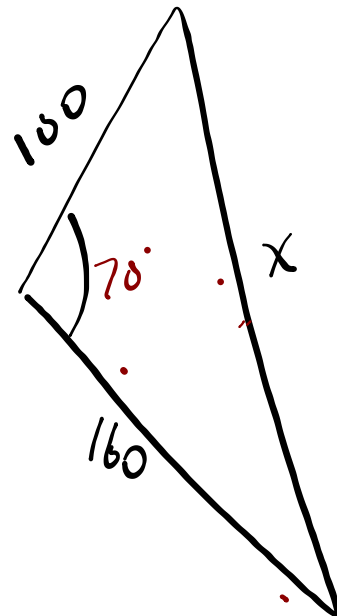
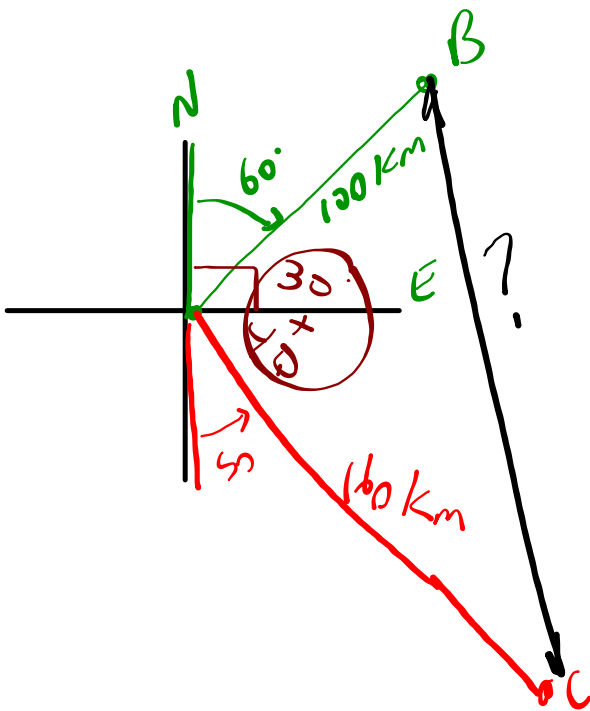


Booklet Questions... 10.12: #9, 11, 12

Let's do #8 TOGETHER...

Quiz

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°E at 100 km while the other bears S50°E at 160 km. How far apart are the planes from each other?



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

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$$x^2 = 24655.35541$$

$$x =$$

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