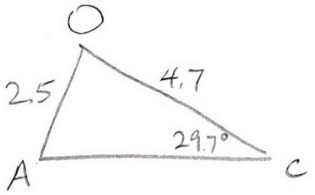
[2] $h = r \sin H = 6.2 \sin 53.1° \approx 5.0$ (2) (1)

OR

$h \geq r$ IE. $h \geq 6.2$ (1)

[3] [a]



SSA → AMBIGUOUS?

$a \sin C = 4.7 \sin 29.7° \approx 2.3 < 2.5 < 4.7$

2 Δ's POSSIBLE

$$\frac{\sin A}{4.7} = \frac{\sin 29.7°}{2.5} \rightarrow \sin A = \frac{4.7 \sin 29.7°}{2.5}$$

(2)

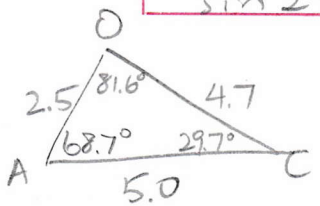
$$A = \sin^{-1} \frac{4.7 \sin 29.7°}{2.5} \approx 68.7°$$ (1)

OR

(1) $180° - 68.7° = 111.3°$

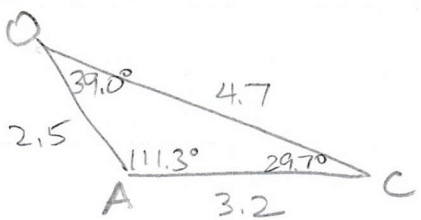
IF $A = 68.7°$, $O = 180° - (29.7° + 68.7°) = 81.6°$ (1)

(2) $$\frac{O}{\sin 81.6°} = \frac{2.5}{\sin 29.7°} \rightarrow O = \frac{2.5 \sin 81.6°}{\sin 29.7°} \approx 5.0$$ (1)

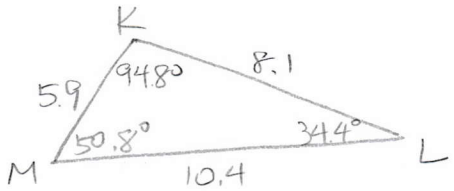


IF $A = 111.3°$, $O = 180° - (29.7° + 111.3°) = 39.0°$ (1)

(2) $$\frac{O}{\sin 39°} = \frac{2.5}{\sin 29.7°} \rightarrow O = \frac{2.5 \sin 39°}{\sin 29.7°} \approx 3.2$$ (1)



[b]



$k^2 = 5.9^2 + 8.1^2 - 2(5.9)(8.1)\cos 94.8°$ (2)

≈ 108.4179

$k \approx 10.4$ (1)

$\frac{\sin L}{5.9} = \frac{\sin 94.8°}{10.4} \longrightarrow \sin L = \frac{5.9 \sin 94.8°}{10.4}$

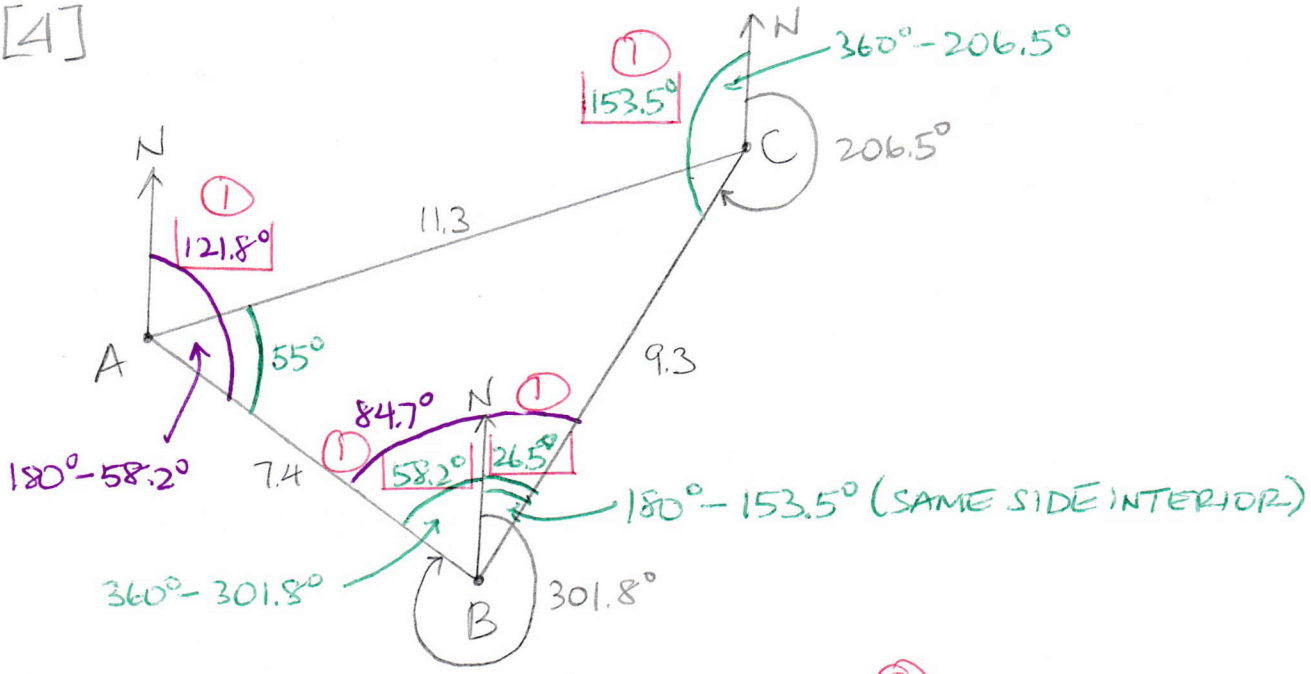
(2)

$L = \sin^{-1}\frac{5.9 \sin 94.8°}{10.4} \approx 34.4°$ (1)

$M = 180° - (94.8° + 34.4°) = 50.8°$ (1)

[c] $3.6 \geq 2.3 + 1.2 = 3.5$ (2) DNE (1)

[4]



$b^2 = \boxed{7.4^2 + 9.3^2 - 2(7.4)(9.3)\cos 84.7^\circ} \approx 128.5361$ (2)

$b \approx \boxed{11.3}$ (1)

(2) $\boxed{\dfrac{\sin A}{9.3} = \dfrac{\sin 84.7^\circ}{11.3}} \longrightarrow \sin A = \dfrac{9.3 \sin 84.7^\circ}{11.3}$

$A = \boxed{\sin^{-1} \dfrac{9.3 \sin 84.7^\circ}{11.3} \approx 55.0^\circ}$ (1)

CJ'S HOUSE IS 11.3 MILES ON A BEARING OF $\boxed{121.8^\circ - 55.0^\circ = 66.8^\circ}$

FROM AJ'S HOUSE (1)

[5] $\frac{1}{2}rb\sin G = \boxed{\frac{1}{2}(5.7)(3.0)\sin 63.9^\circ} \approx \boxed{7.7}$

(2) (1)