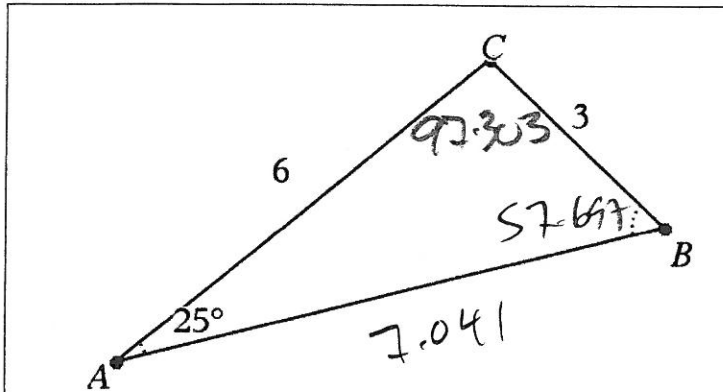


SOLVE EACH TRIANGLE based on the GIVEN INFORMATION, if TWO triangles are present, then state BOTH Answers.

Show your work in a clear manner. Approximate to at least two decimal places

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c} \quad \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} \quad \cos A = \frac{b^2 + c^2 - a^2}{2bc} \quad a^2 = b^2 + c^2 - 2bc \cdot \cos A$$



Triangle ABC (if angle B is acute)
Show work for Angle B

$$\frac{\sin 25}{3} = \frac{\sin B}{6}$$

$$\sin B = \frac{6 \sin 25}{3}$$

$$B = \sin^{-1}\left(\frac{6 \sin 25}{3}\right)$$

Angle B = 57.697 Angle C = 97.303

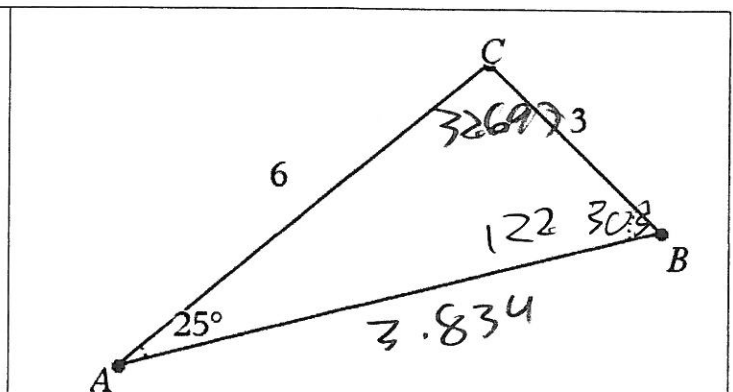
$$180 - 57.697 - 25 = 97.303$$

Show work for side c

$$\frac{c}{\sin 97.303} = \frac{3}{\sin 25}$$

$$c = \frac{3 \sin 97.303}{\sin 25}$$

$$\approx 7.041$$



Triangle ABC (if angle B' is obtuse)
Show work for Angle B'

$$180 - 57.697 = 122.303$$

$$122.303 + 25 < 180$$

$$180 - 122.303 - 25 =$$

Angle B' = 122.303 Angle C' = 32.697

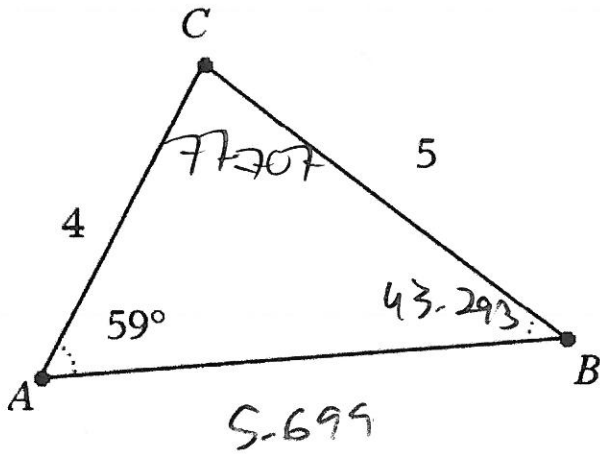
Show work for side c'

$$\frac{c'}{\sin 32.697} = \frac{3}{\sin 25}$$

$$c' = \frac{3 \sin 32.697}{\sin 25}$$

$$\approx 3.834$$

SOLVE EACH TRIANGLE based on the GIVEN INFORMATION, if TWO triangles are present, then state BOTH Answers.



Triangle ABC (if angle B is acute)

Show work for Angle B

$$\frac{\sin 59}{4} = \frac{\sin B}{5}$$

$$\sin B = \frac{4 \sin 59}{5}$$

$$B = \sin^{-1}\left(\frac{4 \sin 59}{5}\right) = 43.293$$

Angle B = 43.293 Angle C = 77.707

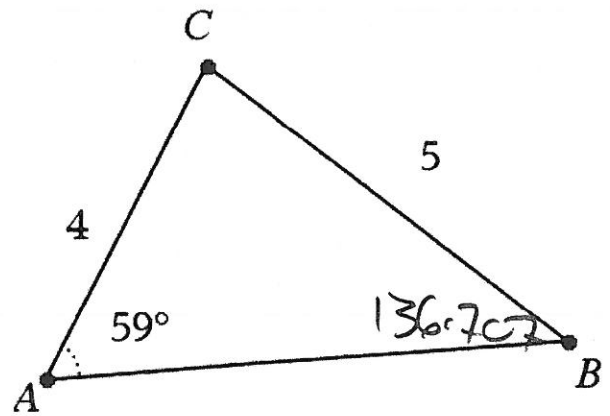
$$180 - 59 - 43.293$$

Show work for side c

$$\frac{c}{\sin 77.707} = \frac{5}{\sin 59}$$

$$c = \frac{5 \sin 77.707}{\sin 59}$$

$$= 5.699$$



Triangle ABC (if angle B' is obtuse)

Show work for Angle B'

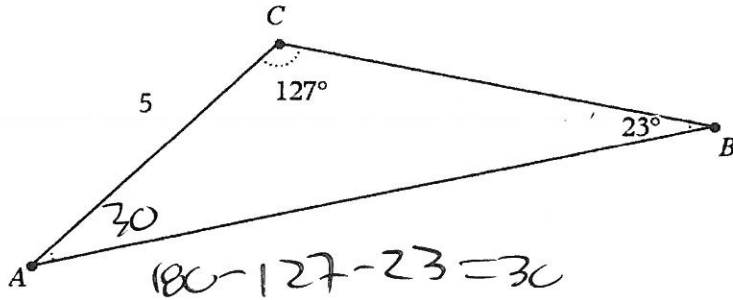
$$136.707 + 59 > 180$$

no sub \triangle

Angle B' = _____ Angle C' = _____

Show work for side c'

Determine the missing angle or side lengths stated related to each triangle

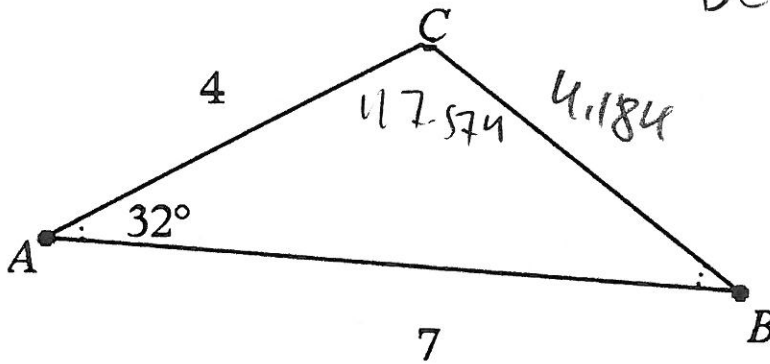


$$\frac{AB}{\sin 27} = \frac{5}{\sin 23}$$

$$AB = \frac{5 \sin 127}{\sin 23} = 5.810$$

Find Side AB = 10.210 Find side BC = 11

Determine the missing angle or side lengths stated related to each triangle

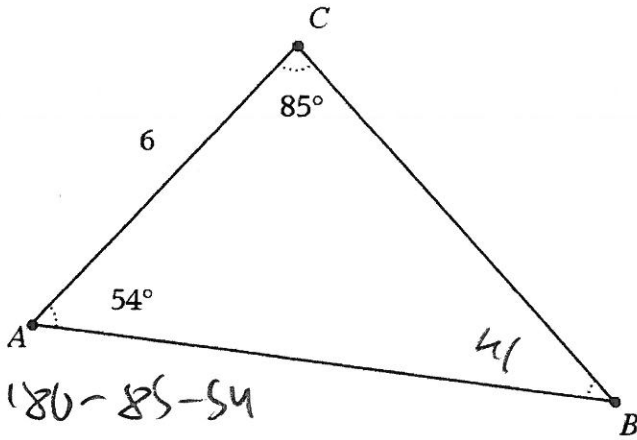


$$BC = \sqrt{4^2 + 7^2 - 2(7)(4)\cos 32} \approx 4.184$$

$$\angle C = \arccos\left(\frac{4^2 + 4.184^2 - 7^2}{2(4)(4.184)}\right) \approx 117.574$$

Find Angle C = 117.574 Find side BC = 4.184

Determine the missing angle or side lengths stated related to each triangle



$$\frac{AB}{\sin 85} = \frac{6}{\sin 41}$$

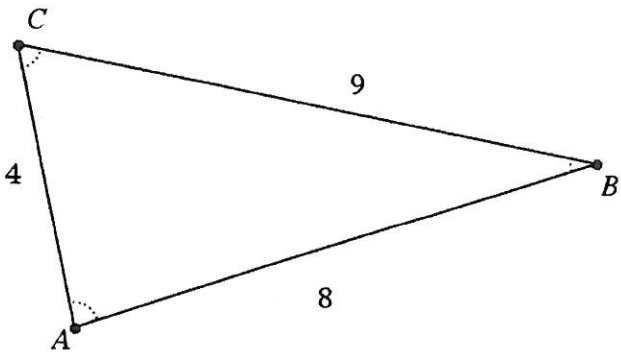
$$AB = \frac{6 \sin 85}{\sin 41}$$

$$9.111$$

$$180 - 85 - 54$$

Find Side AB = 9.111 Find side BC = 4.1

Determine the missing angle or side lengths stated related to each triangle



$$\cos C = \frac{4^2 + 9^2 - 8^2}{2(4)(9)}$$

$$C = \cos^{-1}\left(\frac{4^2 + 9^2 - 8^2}{2(4)(9)}\right)$$

$$= 62.720$$

Find Angle C = 62.720 Find Angle B = 66.661

6:08