Chapter 6 / **Example 15**

Finding angles using the sine rule

The diagram to the right shows a river with a 5 m long fence AB, built at an angle of 34° to the riverside.
Farmer Brown wants to fence off an area in the shape of a triangle ABC (as shown in the diagram) for his three goats. He has 3m of fencing left. Find the angles ACB and ABC.

Open a new document and add a Calculator page.

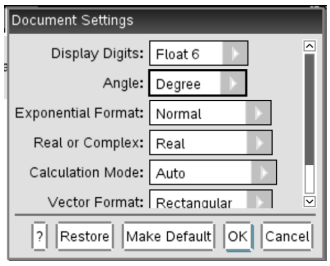
Use the touchpad to click on the wheel icon in the page header.

Select 2:Document Settings…

Select 'Degree' as the unit for Angle.

Use the touchpad to select OK or click enter.

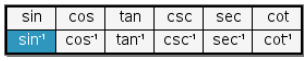
The page header should now show 'DEG'.



$\sin C = \dfrac{5\sin 34°}{3}$.

Using your GDC enter the expression $C = \sin^{-1}\left(\dfrac{5\sin 34}{3}\right)$ directly.

Press trig and select $\sin^{-1}$ from the menu with the touchpad.



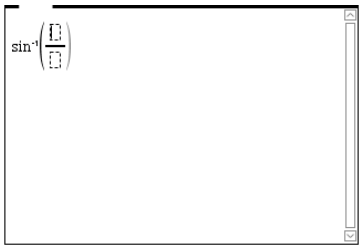
Press ctrl to enter a fraction template.

Type 5 in the numerator.

To enter sin Press trig and select sin from the menu with the touchpad.

Type 34 and then ▼ to move to the denominator.

Type 3 and press enter.



Chapter 6 / **Example 15**

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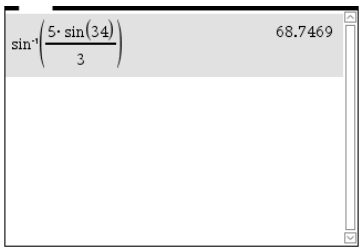
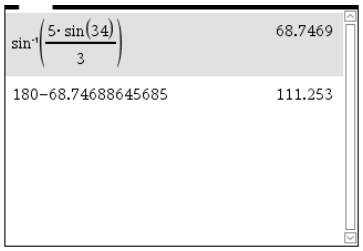
$C = 68.7°$.	
But C could also be obtuse too. Enter 180 − ctrl ans. $C = 68.7°$ or 111.3.	
Copying the results for C, find the possible values for B. $B = 180 - (34 + C)$. $B = 77.3$ or 34.7.