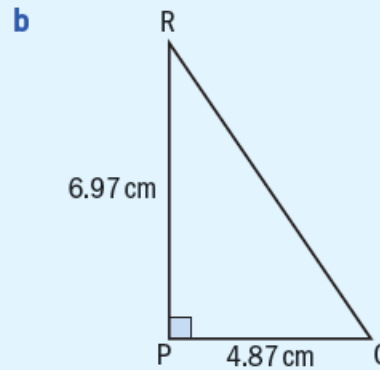
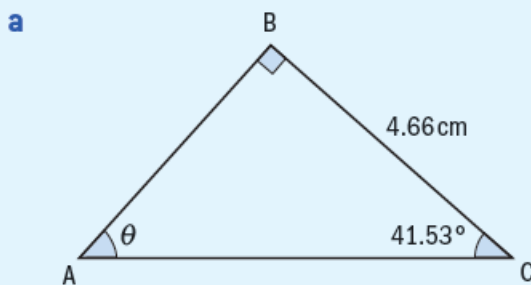


Chapter 1 / **Example 7****Using exact values in trigonometry**

For each triangle, solve for the unknown angles and sides.



Open a new document and add a Calculator page.

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

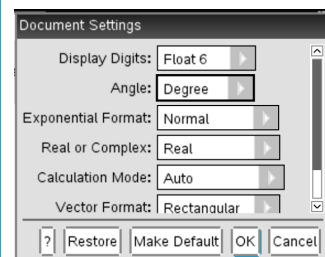


Select 2:Document Settings...

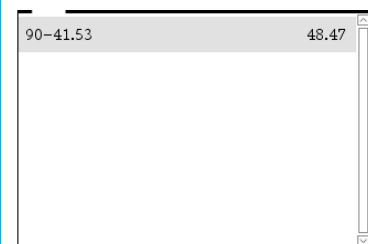
Select 'Degree' as the unit for Angle.

Use the touchpad to select OK or click **enter**.

The page header should now show 'DEG'.



Calculate $\theta = 90^\circ - 41.53^\circ = 48.47^\circ$



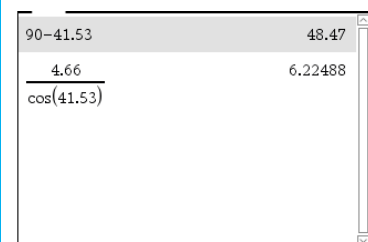
Calculate $AC = \frac{4.66}{\cos(41.53)}$

Press **ctrl** **÷** **1/x** to enter the fraction template.

In the numerator type 4.66.

In the denominator enter cos by pressing **trig** and selecting cos from the menu with the touchpad. Type 41.53, and press **enter**.

$AC = 6.22 \text{ cm}$



Chapter 1 / **Example 7****Using exact values in trigonometry**

Calculate AB using Pythagoras' theorem.

Press $\boxed{\text{ctrl}}$ $\boxed{x^2}$ $\boxed{\sqrt{}}$. Navigate up to the result of AC and press $\boxed{\text{enter}}$. This will paste the value found to the maximum accuracy that the GDC stores it.

Press $\boxed{x^2}$ $\boxed{-}$, type 4.66^2 and press $\boxed{\text{enter}}$.

$$AB = 4.13 \text{ cm}$$

$90 - 41.53$	48.47
$\frac{4.66}{\cos(41.53)}$	6.22488
$\sqrt{(6.224881142763)^2 - (4.66)^2}$	4.12717

Note that using the rounded value 6.22 would result in an inaccurate answer of 4.12 to 3 s.f.

$\sqrt{(6.22)^2 - (4.66)^2}$	4.11981
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$$\text{Calculate } RQ = \sqrt{6.97^2 + 4.87^2}$$

$$RQ = 8.50 \text{ cm}$$

$\sqrt{(6.97)^2 + (4.87)^2}$	8.50281
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$$\text{Calculate } P\hat{Q}R = \tan^{-1}\left(\frac{6.97}{4.87}\right)$$

Enter \tan^{-1} by pressing $\boxed{\text{trig}}$ and selecting \tan^{-1} from the menu with the touchpad. Press $\boxed{\text{ctrl}}$ $\boxed{\div}$ $\boxed{\frac{\Box}{\Box}}$ to use the fraction template.

$$P\hat{Q}R = 55.1^\circ$$

$\sqrt{(6.97)^2 + (4.87)^2}$	8.50281
$\tan^{-1}\left(\frac{6.97}{4.87}\right)$	55.0577

Use the calculator value of $P\hat{Q}R$ to calculate $P\hat{R}Q$.

$$P\hat{R}Q = 90 - 55.1^\circ$$

$$P\hat{R}Q = 34.9^\circ$$

$\sqrt{(6.97)^2 + (4.87)^2}$	8.50281
$\tan^{-1}\left(\frac{6.97}{4.87}\right)$	55.0577
$90 - 55.057662996968$	34.9423