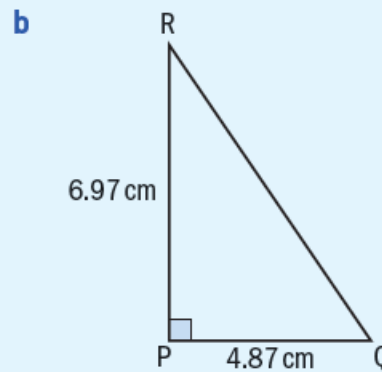
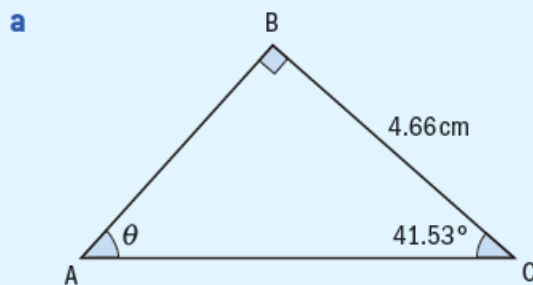


Chapter 1 / **Example 7****Using exact values in trigonometry**

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



Press **MENU** 1 **RUN-MAT** to display the Run-Matrix screen for arithmetical calculations.

Press **SHIFT** **MENU** (SETUP)

Scroll down using **▼** to Angle and change the setting to **F1** Deg.

Press **EXIT**.

Input/Output: Math
Mode : Comp
Frac Result : d/c
Func Type : Y=
Draw Type : Connect
Derivative : Off
Angle : Deg
Deg Rad Gra

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

90-41.53 48.47
□
JUMP DELETE MAT/VCT MATH

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

Press **□** and enter 4.66 in the numerator of the fraction template.

In the denominator press **cos**. Type 41.53 and press **EXE**.

$AC = 6.22$ cm

90-41.53 48.47
4.66
cos 41.53 6.224881143
□
JUMP DELETE MAT/VCT MATH

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

Calculate AB using Pythagoras' theorem.

Press SHIFT (\rightarrow) (Ans) \rightarrow ALPHA B and press EXE . This will save the value found to the maximum accuracy that the GDC stores it.

Press SHIFT x^2 ($\sqrt{}$), ALPHA B, x^2 $-$, type 4.66^2 and press EXE .

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

$\text{COS } 41.55$ 6.224881143
 Ans \rightarrow B 6.224881143
 $\sqrt{B^2 - 4.66^2}$ 4.127171579
 JUMP DELETE \rightarrow MATH

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

Press $\text{S}\rightarrow\text{D}$ to display this value as a decimal.

$\sqrt{6.22^2 - 4.66^2}$ 4.119805821
 JUMP DELETE \rightarrow MATH

Calculate $RQ = \sqrt{6.97^2 + 4.87^2}$

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

$\sqrt{6.97^2 + 4.87^2}$ 8.5028113
 JUMP DELETE \rightarrow MATH

Calculate $P\hat{Q}R = \tan^{-1} \frac{6.97}{4.87}$

Press $\text{F}\frac{\Box}{\Box}$ to use the fraction template.

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

$\sqrt{6.97^2 + 4.87^2}$ 8.5028113
 $\tan^{-1} \frac{6.97}{4.87}$ 55.057663
 JUMP DELETE \rightarrow MATH

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

Press SHIFT (\rightarrow) (Ans) \rightarrow ALPHA Q and press EXE . This will save the value found to the maximum accuracy that the GDC stores it.

$$P\hat{R}Q = 90 - Q$$

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

$\tan^{-1} \frac{6.97}{4.87}$ 55.057663
 Ans \rightarrow Q 55.057663
 $90 - Q$ 34.942337
 JUMP DELETE \rightarrow MATH