

Chapter 1 / **Example 9**

Using the sine rule to find an angle

In a triangle $\triangle DEF$, $DE = 12$ cm, $EF = 14$ cm and $\hat{D}EF = 45^\circ$.

Draw a labelled diagram and find the size of the angle $\hat{E}FD$ to the nearest degree.

Press **MENU** 1 **Run-Matrix** 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
```

$$\sin \hat{E}FD = \frac{12 \sin 45}{14}$$

Using your GDC enter the expression $\hat{E}FD = \sin^{-1} \frac{12 \sin 45}{14}$ directly.

Press **SHIFT** \sin^{-1} then press **□** to add a fraction template.

```
sin⁻¹ □
JUMP DELETE MAT/VCT MATH
```

Type 12 **sin** 45 in the numerator.

Close the parentheses and then press **▼** to move to the denominator.

```
sin⁻¹ 12sin 45
      □
JUMP DELETE MAT/VCT MATH
```

Type 14 in the denominator.

Press **EXE**.

$\hat{E}FD = 37^\circ$ (to the nearest degree).

```
sin⁻¹ 12sin 45
      14
      37.30742828
□
JUMP DELETE MAT/VCT MATH
```