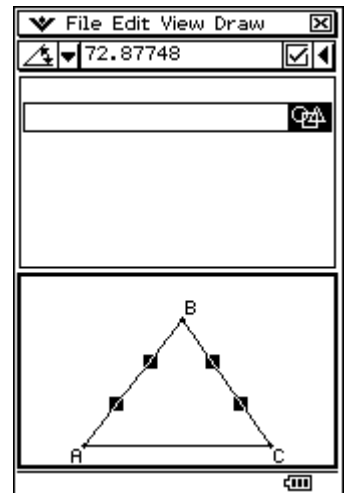


This help sheet uses an eActivity to show examples of ways to deal with the ambiguous case of the sine rule when solving obtuse triangles. In this case the problem is to find the size of angle B when angle C is 55° , $AB = 6\text{cm}$ and $AC = 7\text{cm}$.

For an introduction to eActivities, please work through sheet 601 – ‘Storing Formulae in eActivities’ first.

Start a new eActivity and save it with a suitable filename.

Insert a Geometry strip and draw a triangle with the constraints above.



The previous screen shows that angle B is close to 73° .

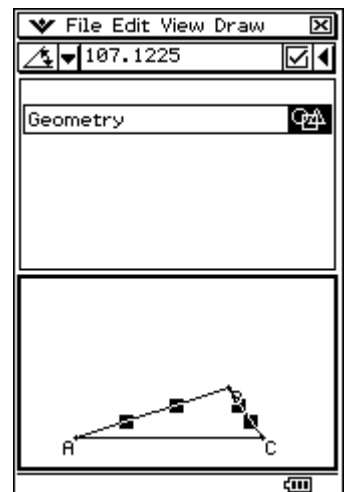
Now select just the corner B, drag it towards corner C and release.

Measuring the angle B now gives 107° .

Try dragging B to other places.

Hint: Use Edit, Undo if strange things happen!

Close the Geometry window and save your updated eActivity.



Now insert a NumSolve strip.

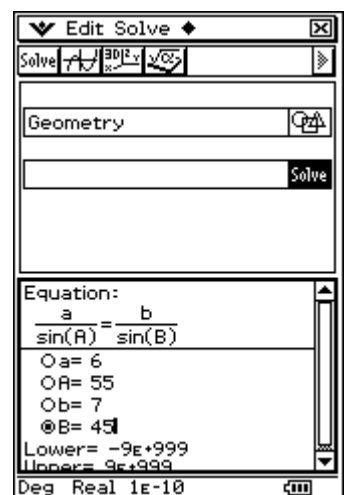
Use the keyboard to enter the sine rule $\frac{a}{\sin A} = \frac{b}{\sin B}$.

Set the values for a, A and b.

Enter 45° as an acute approximation for the solution to B.

Check the radio button next to B and tap Solve.

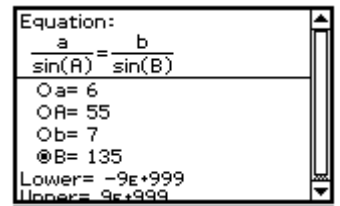
$B = 73^\circ$.



Now enter 135° as an obtuse approximation for the solution to B.

Check the radio button next to B and tap Solve.

B = 107°.



Close the NumSolve window and save your updated eActivity.

Now insert a Main strip.

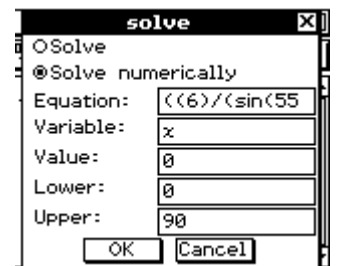
Use the keyboard to enter the equation $\frac{6}{\sin 55} = \frac{7}{\sin x}$ and then select it.

Tap **Interactive, Equation/Inequality, solve** and tap the Solve numerically button.

Modify the Upper and Lower values to 0° and 90° (the bounds for acute angles) and then tap **OK**.

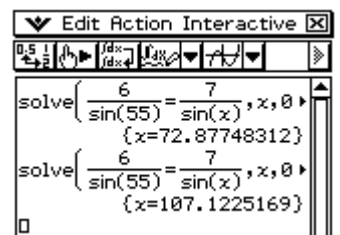
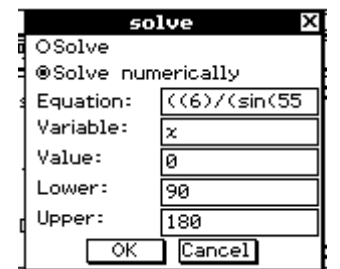
A warning appears. Tap **OK**.

x = 73°.



Repeat, this time using the Lower and Upper as the bounds for obtuse angles, 90° to 180°.

x = 107°.



Close the Main window and save your updated eActivity.