


Extended Activity: Create a right angles triangle problem sheet

We will make a simple problem sheet which will allow the student to create a right angled triangle problem then check their answer for unknown lengths and angles.



Overall tasks to be completed using GeoGebra:

1. Construct a right angled triangle and mark on its angles and side lengths
2. Create Check boxes to hide and unhide angles and side lengths


Task 0 – Some GeoGebra basics

- (1) Screen has the *Drawing Pad*, the *Algebra Window* the *Input Bar* and the *Tool Bar*.
- (2) Remember the Undo button (Edit, Undo)
- (3) Park the cursor at the Selection arrow 
- (4) Hide the axes (Selection Arrow, Right click the Drawing Pad, click Axes)

Task 1 – Construct a right angled triangle

- (1) Click a point on the y axis (point A), click a point on the x axis (point B), click the origin of the axes (point C)
- (2) Click on the Polygon Tool  then the points in the order A, B, C, A to make a triangle
- (3) Click the Angle tool  then points CAB to create angle α then ABC to create angle β
- (4) Hide the axes
- (5) Right click the side “a” label on the triangle and click Show Label to hide it. Drag the value of “a” from the Algebra Window and put it where the label was. Do the same for b and c. In the Algebra Window you will see **text1**, **text2** and **text3**

Task 2 – Make the problem sheet

- (1) Click the Check Box button  then the screen. In the Caption type *Show angle A* and in the dropdown list (click the down arrow) select Angle α . If a Boolean value appears in your list delete it using the X button and click Apply. Click on the arrow selection button and check that this hides and unhides α .
- (2) Create Check boxes for Angle β , text1, text2 and text3 with Captions *Show angle B*, *Show side a*, *Show side b* and *Show side c* respectively.
- (3) With the Check Box button clicked, drag the Check Boxes in line to keep things neat.
- (4) Go to View, Algebra to hide the Algebra window

Problems

1. Hide 2 sides and an angle. Move the triangle corners A and B. Use trigonometry to find the hidden sides and angle. Check your answers!
2. Hide both angles and one side. Move the triangle corners A and B. Use trigonometry to find the hidden side and angles. Check your answers!