

Right Angled Triangles Project: Rhombus Art

Description:

Create a design using a rhombus tile. Draw it using a 'rhombus tool' on geogebra, using side length, position on the x,y axes and angle of rotation.

Details:

Choose a side length for your rhombus. Choose either 60° or 45° for the acute angle.

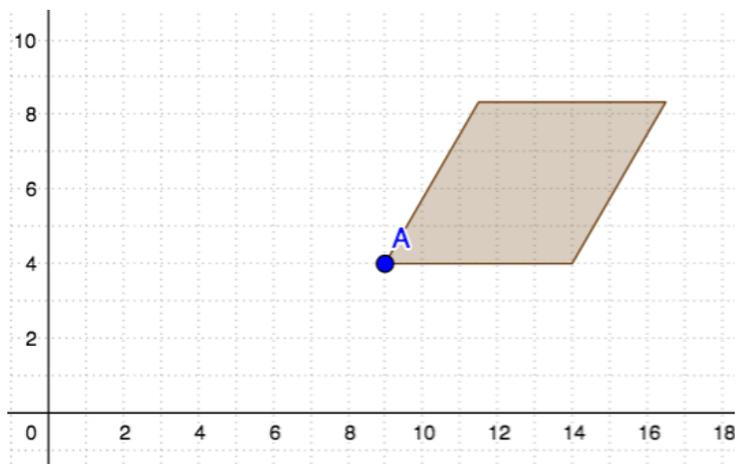
Draw the rhombus accurately on a piece of thin cardboard. Use a ruler only, no protractor. (You may check your calculations with a protractor!)

Cut out your tile, and use it to create another 10-20 tiles on paper or cardboard.

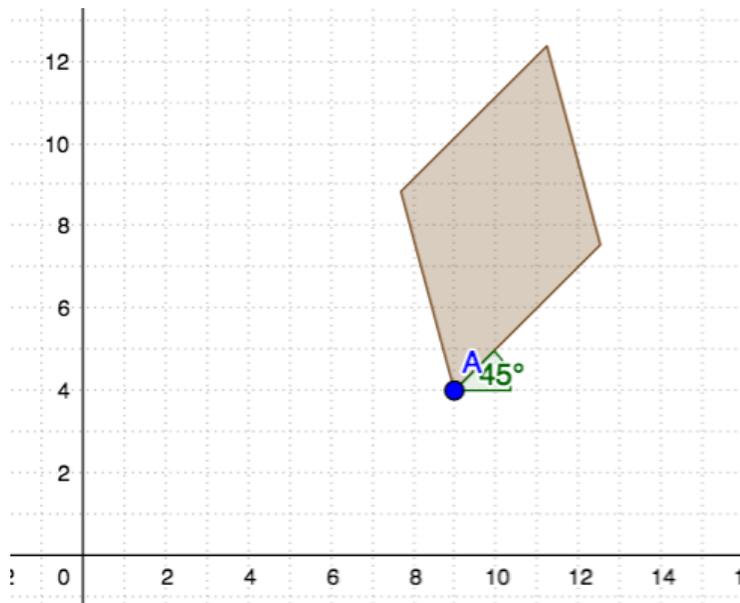
Shape your tiles into a rhombus design.

Now, transfer your design to geogebra. To do this, you will need to calculate the location of one vertex (on the acute angle) for each rhombus tile. You will also need to calculate how much your rhombus is rotated.

For example, this rhombus has a side length 5 and acute angle 60° . This particular tile has been placed at the point A(9,4). The rotation of this tile is 0° .



Now, here is the same rhombus, plotted at (9,4), side length 5 units, but rotated 45° counter clockwise.



Your Report

The pages you need to include in your project report are:

Page 1: introduction to the task (write this when you've completed the project)

Page 2: instructions on how to draw the rhombus template, showing your calculations

Page 3: a sketch/photo of your design made with several tiles. Mark on the vertex you will locate on the x,y axes.

Page 4: your calculations of the position of each vertex marked on your diagram. Your calculations should be written out clearly. You should include the coordinates of each point calculated.

Page 5: A screenshot of your drawing on the geobogra applet.

Page 6: Give an example of an error you made during the project, how you knew it was an error and how you corrected it. If you made no errors during the project, explain how to create the original tile with a ruler only when you choose a side length 'n' and angle 'theta' (a formula with two unknowns).