**Dinky King 2 – The Search for the Damsel**

After the success of Dinky King I have been asked to produce a sequel. Dinky King has taken our damsel into Polygon World. Murrio has to navigate his way around a series of buildings of different shapes and then build a bridge using different shapes stones to where Dinky King has caged her.

Once again the computer programmer needs angles for the buildings. Here are the building shapes and he’s told me that it would look better if they were all regular, whatever that means. This is the sheet that I’m going to give him to work from, so make sure that your answers are correct!

*What does regular mean? (Write your answer below)*

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Murrio has to run along the edge of each shape collecting gold stars, which are at each corner, and then turn right. He finishes the level when he reaches the point at which he started, having avoided the barrels and collected all the stars. The programmer needs to know three things:

1. How many degrees Murrio has to turn at each corner of each shape?
2. How many degrees has Murrio turned in total for each shape?
3. What is the size of each angle in each shape is?
4. What is the total number of degrees inside each shape is?

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Murrio runs this way

Murrio runs this way

Murrio runs this way

Murrio runs this way

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If Murrio can negotiate all the shapes in Polygon World, then he has to build a bridge from the following shapes:

All the polygons should have the same length sides according to the programmer, and the bridge must fit together with no gaps. Murrio has to build a number of bridges in order to save the damsel. Each bridge has some conditions, though and the programmer needs to know which shapes can be used so that each level can be completed.

*Bridge 1*

*You can only use one type of shape. Which shapes could you use?*

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*Why do these shapes fit together with no gaps?*

*(Think about the angles so the programmer tells me)*

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*Bridge 2*

*You must use 2 shapes that fit together. Which pairs of shapes could you use?*

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*Why do these pairs of shapes fit together with no gaps?*

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*Which shapes can’t be used and why?*

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