A03 – Advanced transforms

The Vulkan application whose source code is contained in file `A03.cpp`, shows a 6 pieces jig-saw puzzle that can be solved by creating the matrices that perform the transformations in file `transforms.hpp`.

Piece	Transform
1	scale 2x proportionally, centered in (2,0,-3)
2	scale 3x on an axis oriented 45 degrees between the x and z axis and passing through point (1,0,0)
3	*find it yourself!* Hint: compose a rotation around an arbitrary point with a translation
4	rotate 60 degree around the y axis, centered in (-1,0,-2)
5	rotate -90 degree around an arbitrary axis passing in (-1,0,0). The x axis can be aligned to this arbitrary direction with a rotation of -45 around the y axis.
6	*find it yourself*! Hint: compose a non-proportional scaling that halves the object along one of the main axes, centered in an arbitrary point, with a translation

If you look at the code in `transforms.hpp`, you will see that all transforms are initialized to the identity matrix (which performs no transform), The goal is to modify such matrices to obtain the desired effect.

In this exercise, you have to use the **GLMlibrary** to build the matrices.

You can move the view using the same keys as in *Assigment0*:

ESC – quit the application			SPACE BAR – move to the next transform			
Q: roll left	**W**: forward	**E**: roll right	**R**: up		↑: look up	
A: left	**S**: backward	**D**: right	**F**: down	←: look left	↓: look down	→: look right