Nanyang Technological University

Lab 5 Report:

# Visual Mathematics

## CZ 2003 Computer Graphics and Visualization

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# Experiment 5: Morphing

Formula\_number\_1 is 9 and Formula\_number\_2 is 7

To make the morphing successful, the variables shared by both shapes should be within the same range. In graph 9 the Theta ranges from 0 to 4π and the Phi ranges from 0 to π. However, in graph 7, the Theta ranges from 0 to half π and the Phi ranges from 0 to 2π. Hence, variables u and v with range from -1 to 1 cannot be directly added to the formula but need to be modified to align the range requirements for each graphs such as 2(u+1) π to modify range of u from -1 to 1 to 0 to 4π.

The resolution of the morphing object cannot be set too high because the visualization efficiency is not good. If the resolution is high, the morphing process becomes less smooth.

The below screenshots show the morphing process from graph 9 to graph 7.











