



**K<sub>5</sub>:** The K<sub>5</sub> Puzzle asks if you can draw edges (lines) to join every vertex (star) in the diagram below to every other vertex, **without the edges crossing each other**. It cannot be solved on a flat surface – the graph is non-planar. But it can be solved on the surface of a mug.

**Task:** Remove your utilities stickers. **Draw the stars** on your mug. Have a go with the **dry-wipe pen!**

**Hint:** If you're struggling, start by finding an almost solution below on flat paper, where the edges cross in only one place. Then draw this almost solution on the mug, using the features of the mug to avoid the cross-over. Hopefully that will help you get a handle of the problem.

