MATH 5703	**Topology I**	Fall 2014
Section: 001	MWF 10:45 – 11:35	Prof. Matthew Clay
	MAIN 322	

Homework 12

1. Let X be the figure-eight graph and Y the theta graph. Describe maps $f\colon X \to Y$ and $g\colon Y \to X$ that are homotopy inverses.

2. Construct an explicit deformation retraction from $\mathbb{R}^n - \{\mathbf{0}\}$ to S^{n-1}.

3. Show that the retract of a contractible space is contractible.

4. Construct a 2–dimensional cell complex that contains both a annulus $S^1 \times I$ and a Möbius band as deformation retracts.

5. Show that S^∞ is contractible.