**Homework 2**

**Team member: Fan Zhang, Zhiqi Chen**

**Q 3.2 :**

Universal Transverse Mercator (UTM): set theory

geodesic distance: metric space

direction (e.g. North, East): Graph Theory

shortest path (for driving on urban roads): Graph Theory

boundary: topology

space-filling curves (Fig. 6.8, pp. 234): Fractal Geometry

planar configurations such as polygons: Euclidean space

straight-line distance: metric space

convex polygon: Euclidean space

landslide probability (chapter 9.4, pp. 350): topology

interior: topology

symmetric relationship: set theory

complement: set theory

exterior: topology

**Q 3.4 :**

Cylindrical: Topological

Azimuthal (projection onto a plane): Projective

upside down (South up): Affine

**Q 4.2**

1 local

2 zonal

3 zonal

4 focal

5 focal

6 zonal

7 zonal

**Q4.4**

1. Austria **is inside** Europe
2. USA **meets** Canada
3. Europe **meets** Asia
4. Lake Superior **overlaps** USA
5. Turkey **overlaps** Europe
6. Lesotho **is inside** South Africa