Topology is NOT ... 

Topology is LIKE ... 

In Geometry we
1. study ...
   e.g.: 
2. study ...
   e.g.: 
3. define ... 
4. study ...
   e.g.: 
5. prove theorems that ...
   e.g.: 
6. prove theorems about ...
   e.g.: 

In Topology we
1. study ...
2. ignore ...
   e.g.: 
   This means we are allowed to 
     (a) 
     (b) 
     (c)
3. focus on . . .

e.g.:

4. define . . .

**Def**: Let $A$ and $B$ be topological spaces. Then $A$ is **topologically equivalent** or **homeomorphic** to $B$ if there is a function $f : A \rightarrow B$ which

1.
2.
3.

**Intuitive idea of topological equivalence**:

•

•

**Thm**: Topological equivalence is . . .

**Thm**: Topological equivalence preserves . . .

e.g.:

**Exercise**: Using your intuitive idea of topological equivalence, classify up to topological equivalence, i.e., sort by topological types the following:

ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789