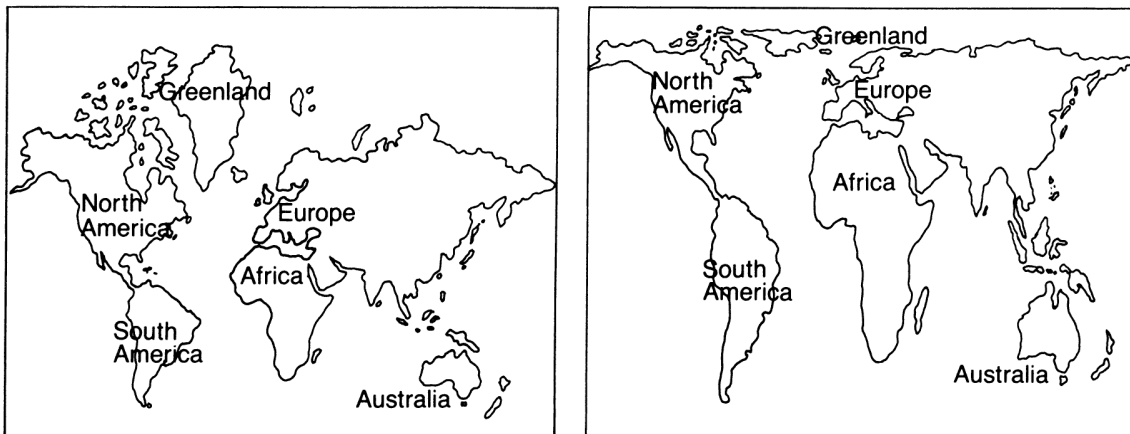


THINKING CRITICALLY**● Picking the Projection**

When people look at a world map, they often look at a Mercator projection of the world. This projection has become a familiar form for the world map. The Mercator projection is valuable because it provides a fairly accurate picture of the shape of the continental landmasses near the equator.

In any projection, distortions arise as a result of trying to model a three-dimensional object (the earth) in two dimensions (a map). The Mercator projection suffers distortions in the polar regions. The sizes of the landmasses near the poles are greatly exaggerated.

Cartographers have the option of using other types of projections that give a very different view of the world. One *equal-area* projection is called the Peters projection. It is named for the German historian Arno Peters, who popularized it. The Peters projection shows the correct relative sizes of the continents. While the Peters projection does show correct size, it distorts the shapes of the continents. Examples of each projection are shown below.

**Your Turn to Think**

1. Maps are used to display a variety of information such as population and annual precipitation. What type of information could be best displayed on a Peters projection?
2. Mercator projections provide accurate landmass shapes with inaccurate size information. Peters projections provide accurate landmass sizes with inaccurate shape information. Why are there no projections that provide both accurate size and shape information?
3. Which state in the United States changes shape the most when going from the Mercator projection to the Peters projection? Explain your choice.
4. What is the best model that can be made of the earth? Explain your answer.