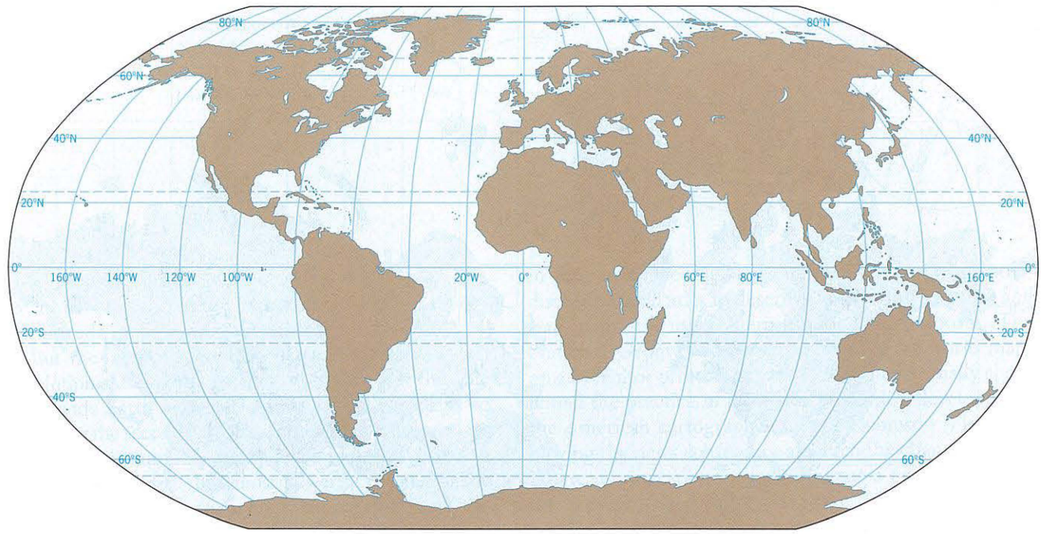

Figure A.5
The Robinson projection substantially reduces the exaggerated size of polar landmasses because the lines of longitude curve toward each other in the polar regions. The Robinson projection better approximates shape, but it lacks the directional utility of the Mercator projection.

SYMBOLS ON MAPS

The third fundamental property of a map is its symbolization. Maps represent the real world, and this can be done only through the use of symbols. Anyone who has used an atlas map is familiar with some of these symbols: prominent dots (perhaps black or red) for cities; a large dot with a circle around it, or a star, for capitals; red lines for roads, double lines for four-lane highways, black lines for railroads; and patterns or colors for areas of water, forest, or farmland. Notice that these symbols respectively represent points, lines, and areas on the ground. For our purposes, we need not go further into map symbolization, which can become a very complex topic when it comes to highly specialized cartography in such fields as geology and meteorology. Nevertheless, it is useful to know why symbols such as those used on the maps in this book were chosen.

Point symbols, as we noted, are used to show individual features or places. On a large-scale map of a city, dots can represent individual houses or locations of businesses. A dot map shows a spatial distribution, such as the distribution of Starbucks coffee shops in Washington, D.C. (Fig. A.9).

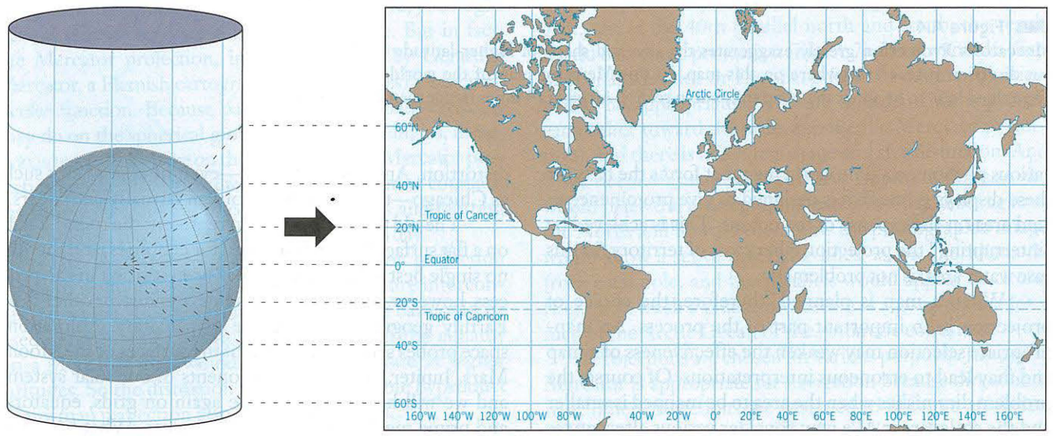

Figure A.6
A Cylindrical projection is created by projecting the grid lines of a globe onto paper that is wrapped around the globe.

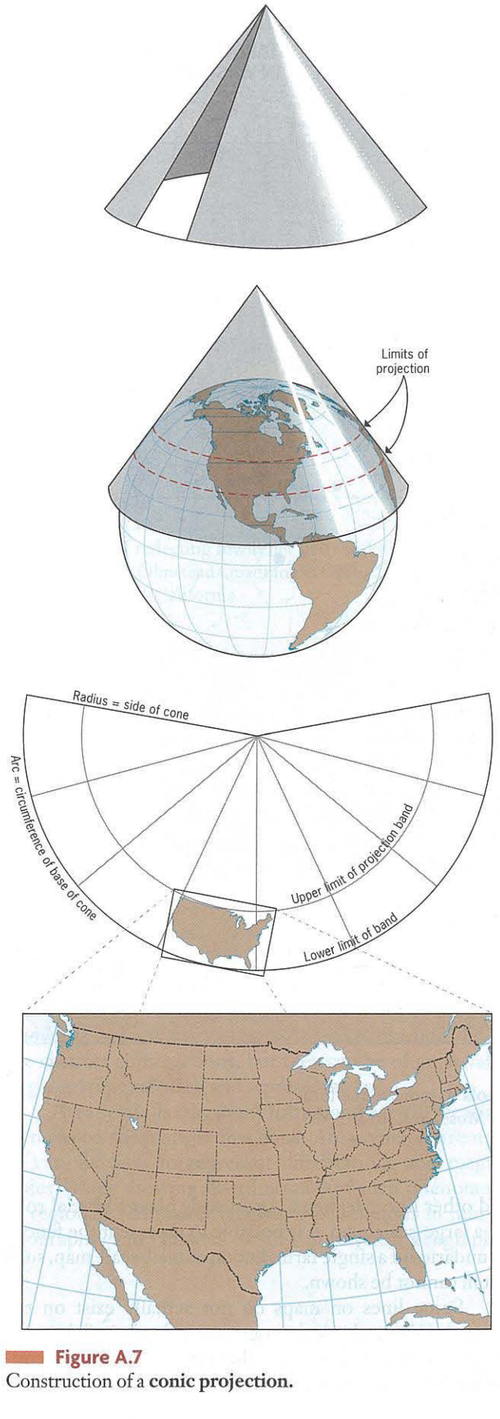

Figure A.7
Construction of a **conic projection.**

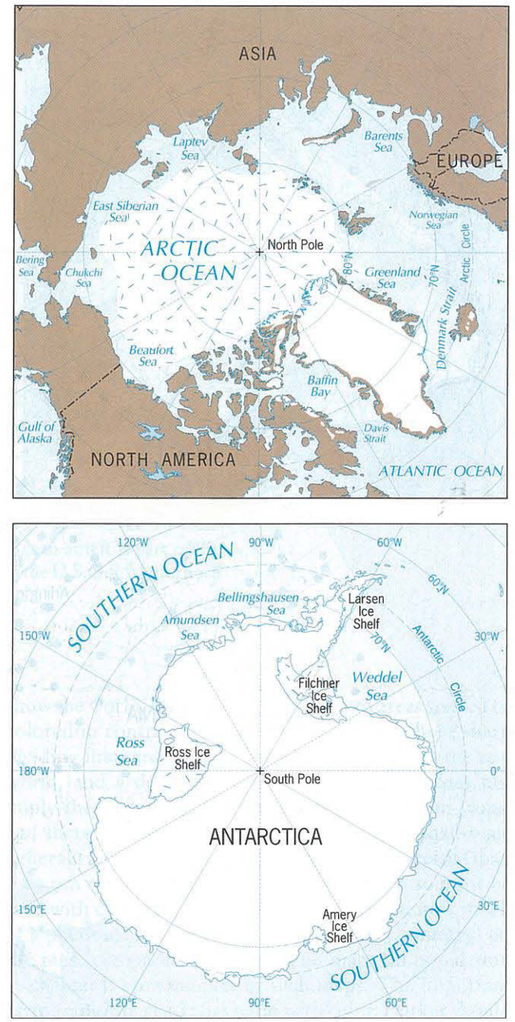

Figure A.8
A Planar projection is created when a light at the center of the globe projects diverging longitude lines onto a flat sheet of paper placed over the North Pole (top) and the South Pole (bottom).