Name_____Date_____Period_____

Latitude and Longitude

Latitude and Longitude are the lines that create the coordinate system on the surface of Earth. This system gives each spot on the surface of earth a unique location, a set of numbers (latitude, longitude). Latitude lines measure North and South of the Equator, while Longitude lines measure East and West of the Prime Meridian.

In this lab, you will be both plotting locations of cities when coordinates are given to you, and reading coordinates of cities off of the maps.

Part 1: The World

Using Map 1 (The World), plot the location (latitude and longitude) of each of the 10 cities below. Label each point on your map with the number that precedes it.

	City	Location
0	Tananarive, Madagascar	(19°S, 48°E)
1	Adelaide, Australia	(35°S,139°E)
2	Astana, Kazakhstan	(51°N, 71°E)
3	Beijing, China	(40°N, 116°E)
4	Cairo, Egypt	(30°N,31°E)
5	GhardaÏa, Algeria	(33°N, 4°E)
6	Krasnoyarsk, Russia	(56°N, 93°E)
7	Mecca, Saudi Arabia	(21°N, 40°E)
8	Mexico City, Mexico	(19°N, 99°W)
9	Paris, France	(49°N, 2°E)
10	Vostok, Antarctica	(78°S, 107°E)

Part 2: The United States

Using Map 2 (The United States) <u>determine the location</u> (latitude, longitude) of the cities listed below. The first one has been done for you.

Location	Latitude	Longitude
Los Angeles, California	*34°N*	*118°W*
Detroit, Michigan		
Memphis, Tennessee		
Pierre, South Dakota		
Salt Lake City, Utah		
Seattle, Washington		

Using Map 2 (The United States)

1. ***<u>Plot the location</u> (latitude and longitude) of each of the 15 cities below. Label each point on your map with the number that precedes it.***
2. ***Once you have plotted the location, in the "State" column of the table below fill in the state that the city is located in.***

******Athens, Georgia will be plotted as a class and filled as an example.******

	City	Location	State
0	*Athens*	*(34°N, 83°W)*	*Georgia*
1	*Aurora*	*(42°N, 88°W)*	
2	*Baton Rouge*	*(31°N, 91°W)*	
3	*Bismarck*	*(47°N, 101°W)*	
4	*Boise*	*(44°N, 116°W)*	
5	*Caribou*	*(47°N, 68°W)*	
6	*Denver*	*(39°N, 105°W)*	
7	*Durham*	*(35°N, 78°W)*	
8	*Garden City*	*(38°N, 101°W)*	
9	*Hastings*	*(41°N, 98°W)*	
10	*Richmond*	*(38°N, 77°W)*	
11	*Seminole*	*(35°N, 97°W)*	
12	*Shelbyville*	*(40°N, 86°W)*	
13	*Talladega*	*(33°N, 86°W)*	
14	*Four Corners*	*(37°N, 109°W)*	
15	*Wilkes-Barre*	*(41°N, 76°W)*	

Part 3: New York State

Using Map 3 (New York State), plot the location (latitude and longitude) of each of the 10 cities below. Label each point on your map with an "X" and the number that precedes it.

	City	Location
1	Cape Vincent	(44°07'N, 76°20'W)
2	Cortland	(42°36'N, 76°11'W)
3	Glens Falls	(43°26'N, 73°33'W)
4	Orchard Park	(42°46'N, 78°44'W)
5	Lake Placid	(44°17'N, 73°59'W)
6	Manhasset	(40°48'N, 73°42'W)
7	Oneonta	(42°27'N, 75°04'W)
8	Poughkeepsie	(41°42'N, 73°55'W)
9	Rome	(43°13'N, 75°27'W)
10	Schenectady	(42°49'N, 73°56 'W)

Using Map 3 (New York State) determine the location (latitude, longitude) of the cities listed below. The first one has been done for you.

	City	Latitude	Longitude
0	Oswego	43°29'N	76°29'W
1	Ithaca		
2	Plattsburgh		
3	Riverhead		
4	Rochester		
5	Watertown		

Discussion Questions:

1. ***Latitude lines run _____ to the Equator.***
2. ***What is the altitude of Polaris (to the nearest degree) in the following cities?***
    a. ***Paris, France _____***
    b. ***Boise, ID, USA _____***
    c. ***Manhasset, NY, USA _____***
    d. ***Baton Rouge, LA, USA _____***
    e. ***Adelaide, Australia _____***
3. ***What is the maximum value for degrees…***
    a. ***of latitude:_____***
    b. ***of longitude: _____***
4. ***Where do ALL lines of longitude meet?_____***
5. ***How many degrees does the Earth rotate in one hour?_____***
6. ***Approximately how many degrees across is each time zone?_____***
7. ***Using the points that you have plotted on the world map, which two cities are most likely within the same Time Zone?***

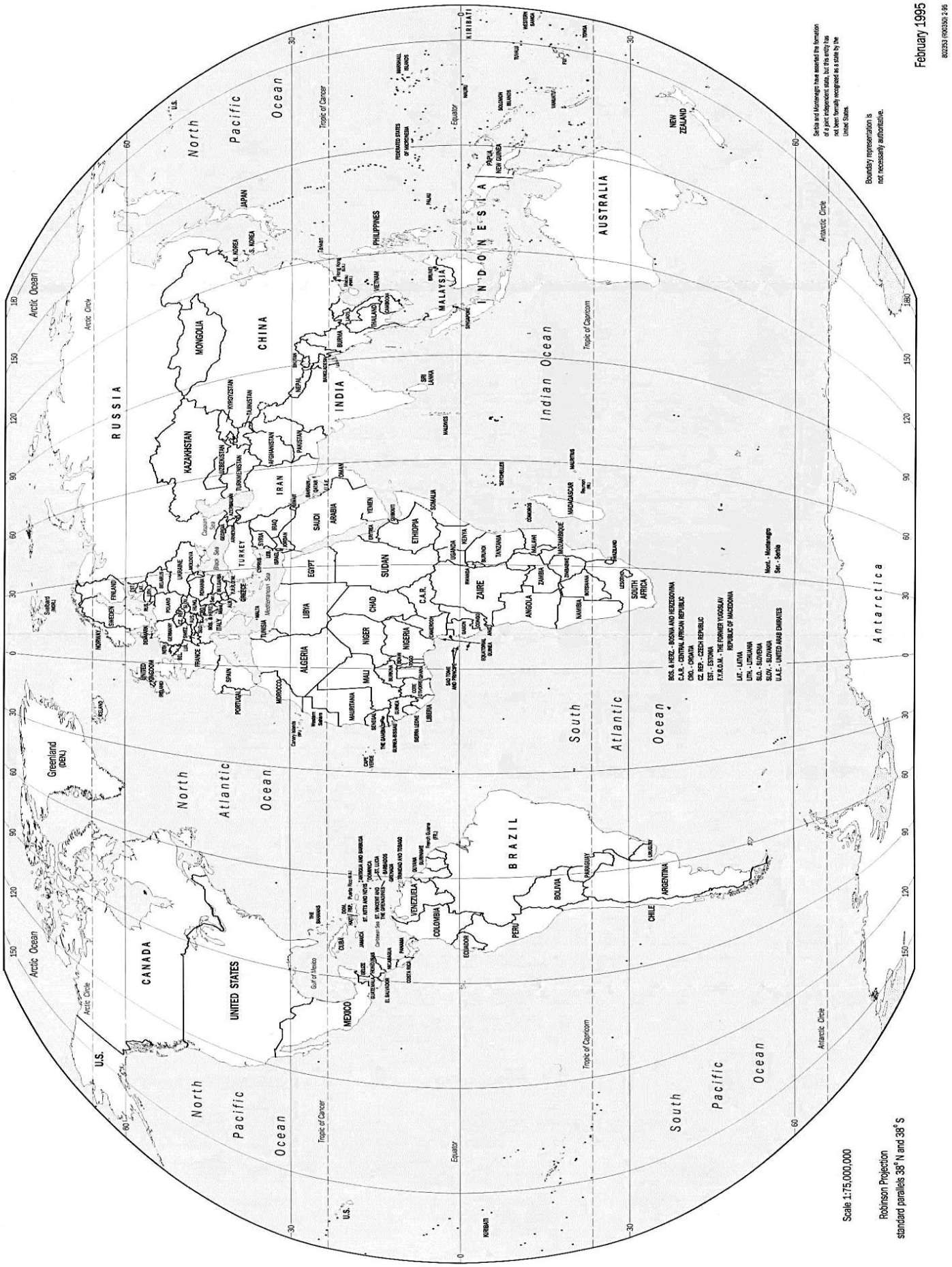
    _____and_____

    b. Why? _____

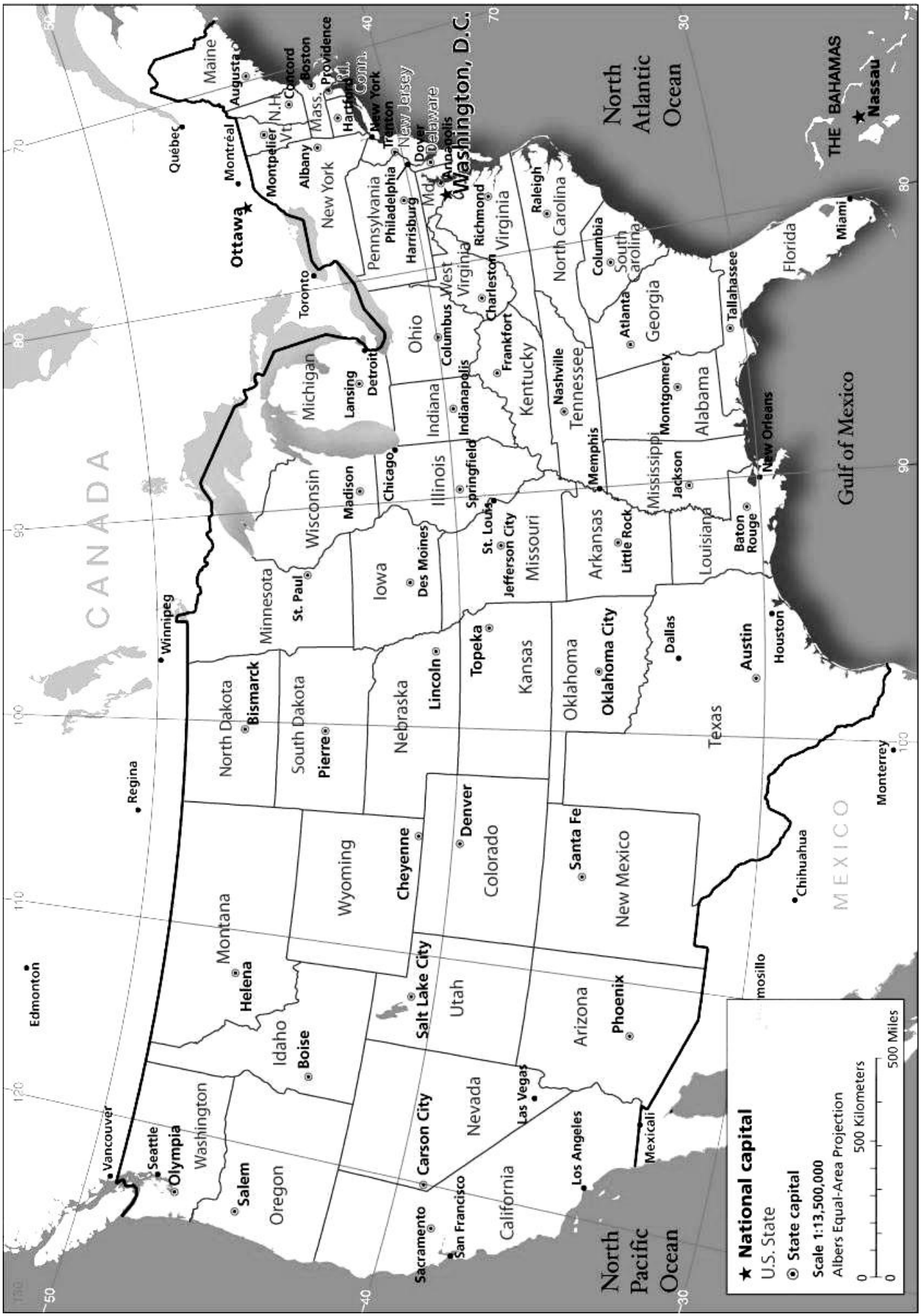
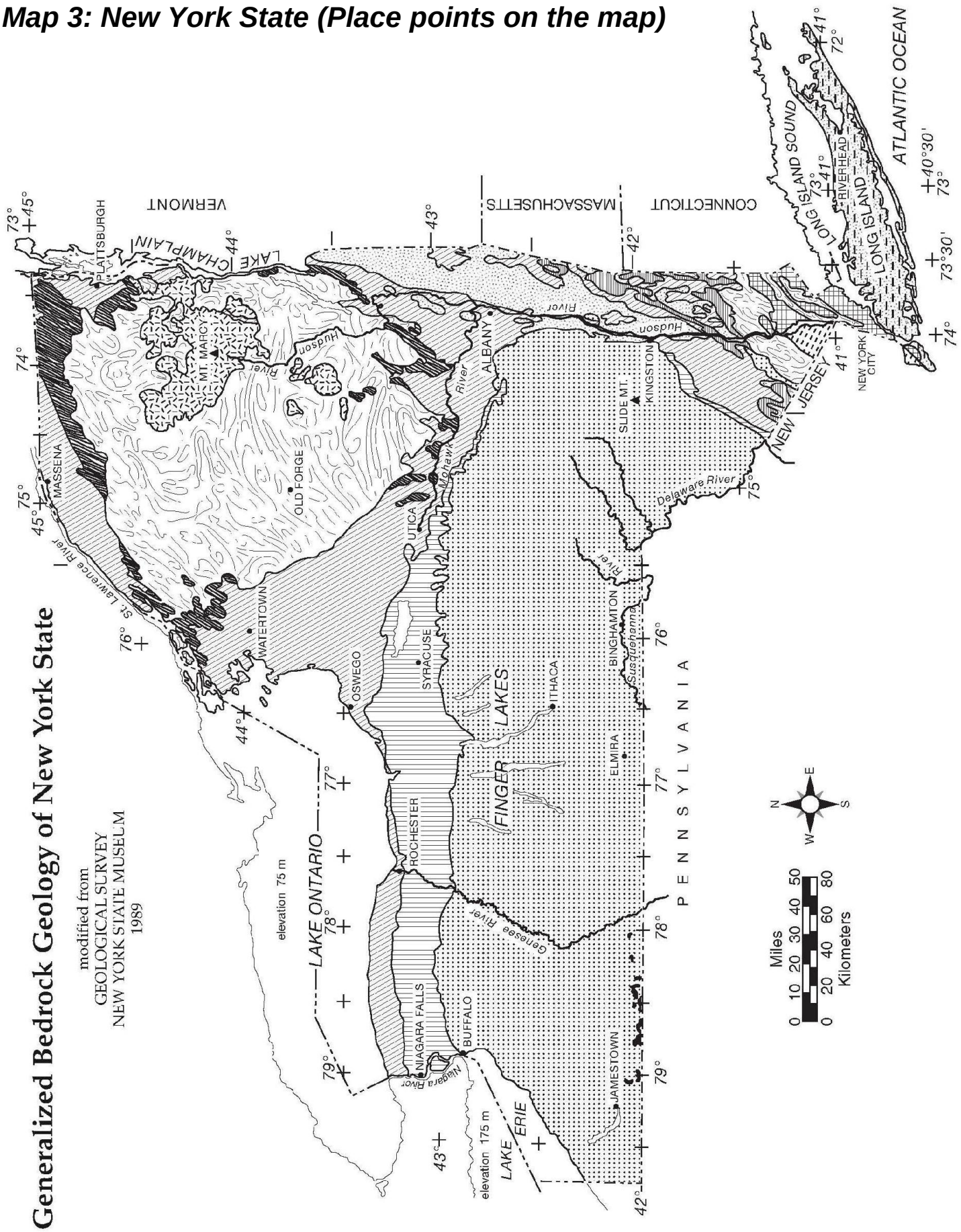
    _____

    _____

Map 1: The World (Place points on the map)



Map 2: The United States (Place points on the map)



Map 3: New York State (Place points on the map)