

EXERCISE 2 PROBLEMS/SOLUTIONS—PART I

1. Using a globe, determine the latitude and longitude (to the nearest degree) of the following cities. Be sure to indicate if the location is north or south latitude, and east or west longitude.

	<u>City</u>	<u>Latitude</u>	<u>Longitude</u>
(a)	Chicago, Illinois	<u>42° N</u>	<u>88° W</u>
(b)	Tokyo, Japan	<u>35° N</u>	<u>140° E</u>
(c)	Sydney, Australia	<u>35° S</u>	<u>151° E</u>
(d)	Singapore	<u>1° N</u>	<u>104° E</u>
(e)	Buenos Aires, Argentina	<u>35° S</u>	<u>58° W</u>

2. Using a globe, determine which major city is located at the following coordinates:

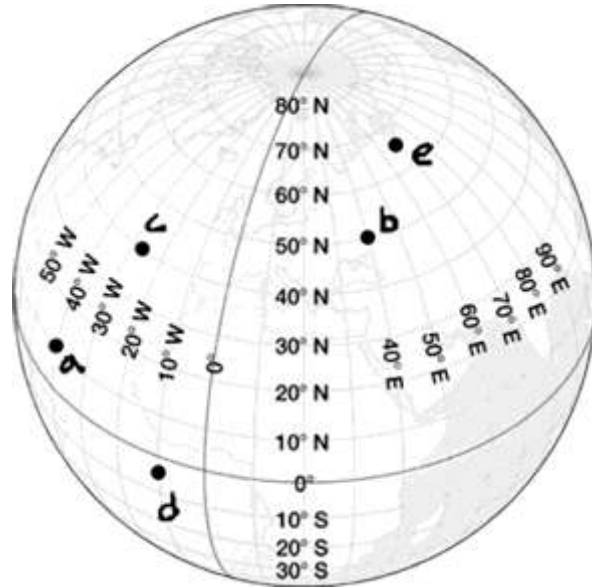
	<u>Latitude</u>	<u>Longitude</u>	<u>City</u>
(a)	14° N	100° E	<u><i>Bangkok</i></u>
(b)	56° N	38° E	<u><i>Moscow</i></u>
(c)	19° N	99° W	<u><i>Mexico City</i></u>
(d)	1° S	37° E	<u><i>Nairobi</i></u>
(e)	37° S	175° E	<u><i>Auckland</i></u>

3. (a) What is the latitude and longitude of your school (estimate to the nearest minute of latitude and longitude; be sure to indicate if the location is north or south latitude, and east or west longitude)?
- (b) What resources did you use to determine this?

EXERCISE 2 PROBLEMS/SOLUTIONS—PART II

1. On the diagram at right, plot the following coordinates with a dot. Then label each dot with its corresponding letter:

- (a) 10° N, 40° W
 (b) 50° N, 40° E
 (c) 40° N, 25° W
 (d) 5° S, 10° W
 (e) 65° N, 70° E



2. Use the index of an atlas to find the following places. Determine the latitude and longitude to the nearest degree:

<u>Place</u>	<u>Latitude</u>	<u>Longitude</u>
(a) Pusan	<u>35° N</u>	<u>129° E</u>
(b) Reykjavik (Reikjavik)	<u>64° N</u>	<u>22° W</u>
(c) Walvis Bay	<u>23° S</u>	<u>14° E</u>
(d) Tuvalu (Ellice Islands)	<u>8° S</u>	<u>177° E</u>

3. If you start at the equator and travel to 10° N latitude, approximately how many kilometers (or miles) north of the equator will you be? Take the circumference of the Earth to be 40,000 kilometers (24,900 miles). Show your calculations.

$$40,000/360 = 111.1 \text{ km/degree} = 1111 \text{ km (approx. 1100 km)}$$

$$24,900/360 = 69.2 \text{ mi./degree} = 692 \text{ mi. (approx. 690 mi.)}$$

4. If you travel west through 10° of longitude along the equator, the distance traveled will be very different from the distance traveled through 10° of longitude at 60° N latitude. Why?

Meridians converge toward the poles and so are closer together at 60° N than at 0°.