

Homework Assignment #1: NAME _____

Instructions:

Read the link Geographic Projections. Then read appendix 3 on your text book. Now you are ready to complete this homework.

Total (20 points)

Hey guys Appendix III in your book is great it has all the info and the best graphics I have seen on this topic. Still more on this!

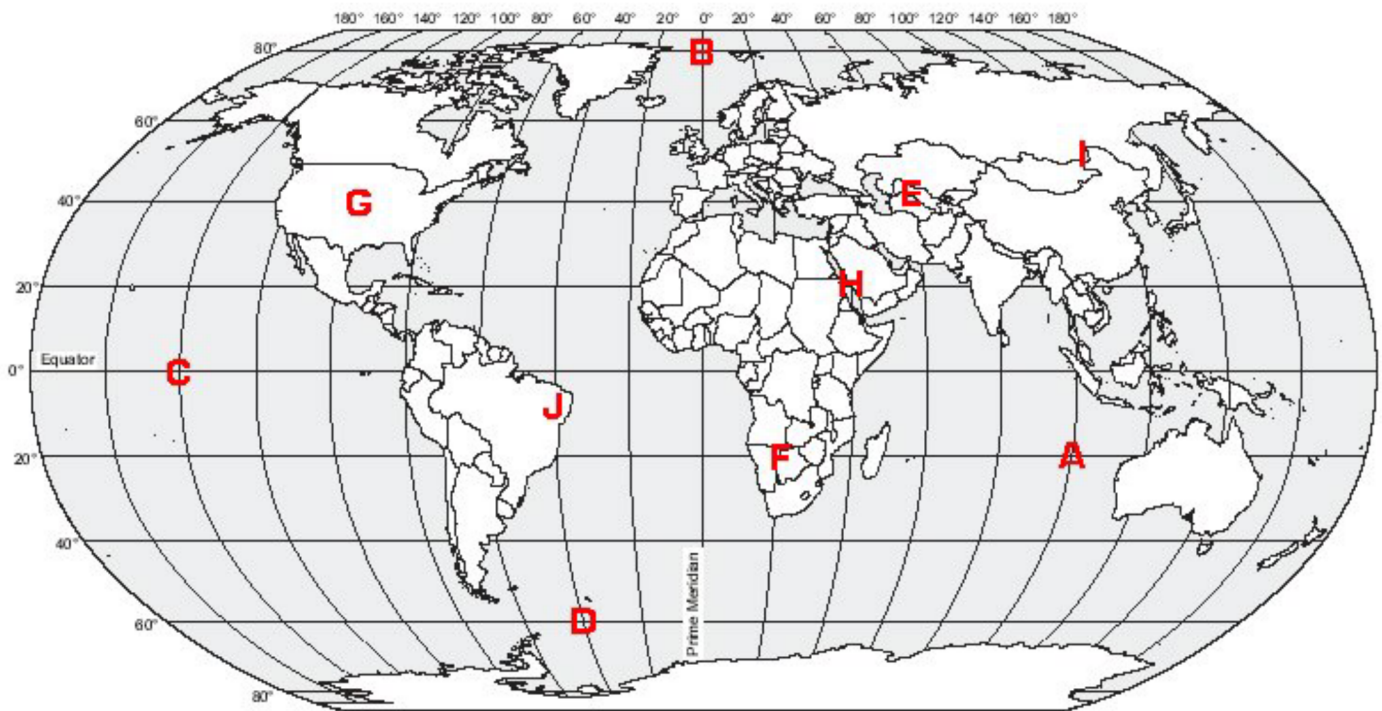
Local noon is the time when Sun reaches its maximum elevation on a given longitude. E.g Prime meridian England happens at 12:00 GMT

So 360 degrees divided by 24 = 15 degrees per 1 hour of change on local noon. Local noon at Miami is 17:00 GMT. So the longitude of Miami is 80.00 West. Five hours and few minutes difference.

But if you set your clock at 12:00 Miami local noon! Then you sail away and find that next local noon is at 11:00 then (in this case) you have sailed 15 degrees East of Miami so your longitude is 65 degrees west!

Polaris the North Star and the Southern Cross can be used to calculate Latitude. Their elevation on degrees above the horizon = your Latitude. So if Polaris is 45 degrees above the horizon your Latitude is 45 degrees North!

You do not need a Sextant!



1. From the latitude and longitude list below match the coordinates to the letters on the map. (3 pts)
10 degrees South, 40 degrees West _____
20 degrees South, 100 degrees East _____

20 degrees North, 40 degrees East _____

0 degrees Latitude, 140 degrees West _____

60 degrees South, 40 degrees West _____

2. Identify the following (4 pts):

A circle at 0 degrees Latitude is called the _____.

A circle at 0 degrees Longitude is called the _____.

A circle at 180 degrees Longitude is 'generally' called the _____.

3. Answer the following (3 pts):

The maximum value for latitude _____

The minimum value for latitude _____

The maximum value for longitude _____

The minimum value for longitude _____

4. 1 degree of Latitude or Longitude can be further divided into smaller increments of minutes and seconds. (2 pts)

How many minutes subdivide 1 degree of latitude? _____

How many seconds subdivide 1 minute of longitude? _____

How many seconds subdivide 1 degree of longitude? _____

5. You use an instrument called a sextant and find the following angles of the North Star or Southern Cross above the horizon. At what latitude are you for each? (Don't forget to mention N or S) (5 pts)

Observation	Your latitude
North Star (Polaris) is 5 degrees above horizon	
Southern Cross is 23 degrees above horizon	
Southern Cross is 89 degrees above horizon	
North Star is directly above you	
North Star is located on the horizon	

6. Using an accurate clock and setting your watch for local noon at your home port, determine your longitude given the following information: Note: Miami Longitude is 80°W, San Diego Longitude is 110°W. (Don't forget to mention E or W) (3 pts)

Observation	Your longitude
You leave Miami and local noon shows 11am	
You leave Miami and local noon shows 8am	
You leave San Diego and local noon shows 2pm	
You leave San Diego and local noon shows 5pm	