Name _____ Date _____ Period _____

Graphing Homework # _____

The equinox happens when the direct ray of the sun strikes the equator at 90°. This happens twice a year and signals the first day of spring and fall. The vernal equinox happens around March 21st each year and begins spring in the Northern hemisphere. September 23rd is the other date when the sun normally strikes directly at the equator and marks the autumnal equinox for the northern hemisphere.

The equinox is also the day of the year when all locations will receive 12 hours of daylight and 12 hours of darkness. The word equinox can be translated as "equal night".

Another special event that happens on the equinox is the location of sunrise and sunset. Sunrise happens somewhere along the eastern horizon and sunset will occur along the western horizon. On the equinox, sunrise will be due East (90°) and sunset will be due West (270°). These are the only days of the year when this will be true.

The data below shows the angle of the sun for an observer at 41°N on March 21st.

What two days during the year will the sun hit the equator at a 90° angle? _____ & _____

How many hours of daylight are received to the equator on the vernal equinox? _____

What does the word equinox mean? _____

Where do sunrise and sunset happen on an equinox?

_____

_____

What season is the vernal equinox? _____

Data for 41° N on March 21st (Spring Equinox)	
Time	Altitude of the Sun (°)
6:00 AM	0
7:00 AM	10.4
8:00 AM	21.3
9:00 AM	31.6
10:00 AM	40.4
11:00 AM	46.8
12:00 PM	49
1:00 PM	47.3
2:00 PM	42.2
3:00 PM	33.9
4:00 PM	23.9
5:00 PM	12.9
6:00 PM	0

Create a line graph from the data table on the Graph Paper on the back.
• create a uniform scale for Time of Day on the x - axis (2 points)
• label the x - axis with both a label and a unit. (2 points)
• create a uniform scale for altitude of the Sun (°) on the y axis. (2 points)
• label the y - axis with both a label and a unit. (2 points)
• plot all thirteen points on your graph (2 points)
• connect the points to draw your line (1 point)
• put an appropriate title on top of your graph. (1 point)
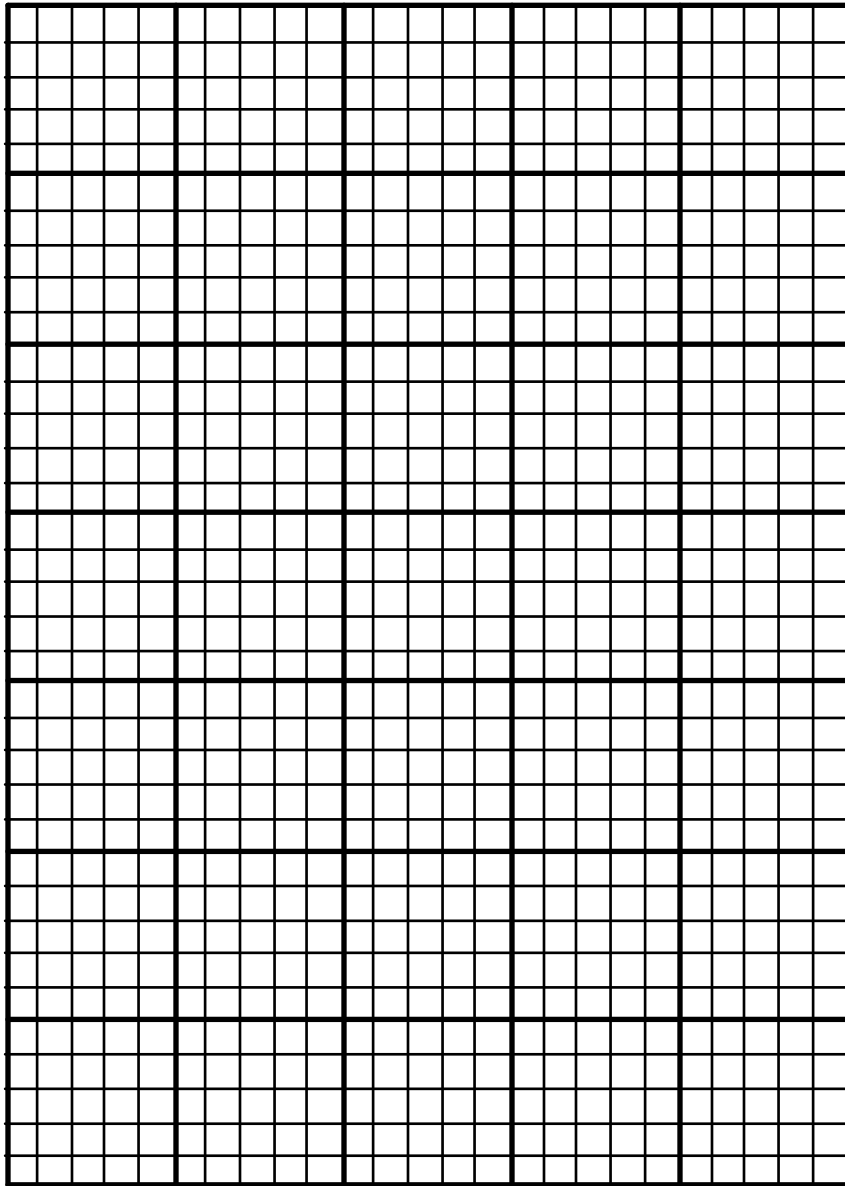
(2 pts)	x- axis	y - axis
Range		
Boxes		
Divide		
Round up		

Answer the questions below in Complete Sentences (2 points each)

1) What happens to the angle of the sun from 6 am until 12 pm?

2) How much does the angle of the sun change between sunrise and noon?

3) At what times would the sun be at an angle of 30°?

4) If you moved closer to the equator, what would happen to the angles that were recorded?

5) If you moved closer to the equator, what would happen to the number of hours of daylight on this day?