Noon Sun Angle Worksheet Name _____

Name	Date	Subsolar Point (Latitude where the sun is overhead at noon)
Equinox	March 22nd	0°
Equinox	September 22nd	0°
Solstice	June 22nd	23.5˚ N
Solstice	December 22nd	23.5˚ S

Noon Sun Angle = 90 – Zenith Angle

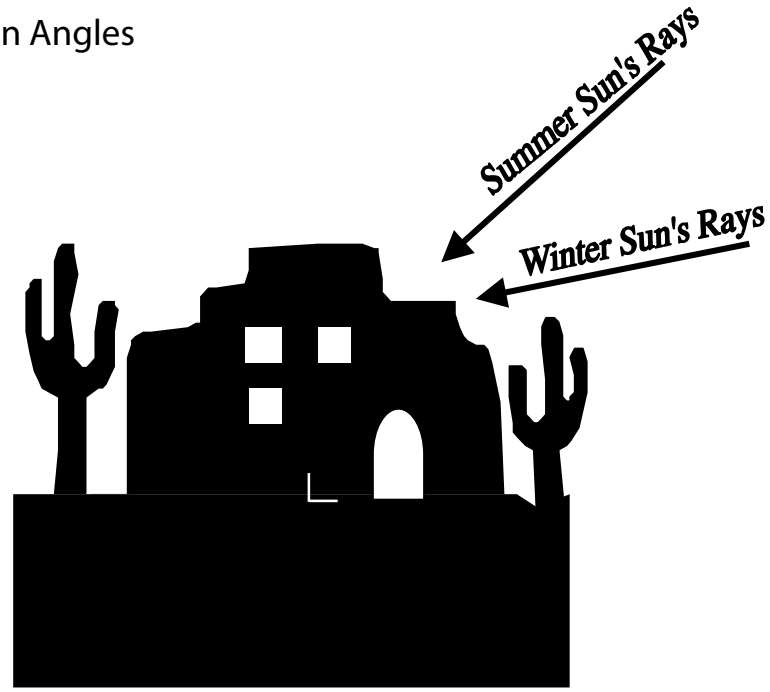
Zenith Angle = latitude where you are at ± subsolar point
If the subsolar point and your latitude are in the same hemisphere, subtract.
If the subsolar point and your latitude are in different hemispheres, add.

Note: if you get a negative number, it means that no sunlight is received at that time of year… or it is dark for 24 hours, use 0° as your answer.

Instructions: complete the table.

Problem	Time of Year	Subsolar Point	Latitude where you are "at"	Zenith Angle	Noon Sun Angle Calculation	Noon Sun Angle
Example	September 22	0˚	14˚	14 – 0 = 14	90 – 14 = 76	76˚
1	Equinox		23.5˚N		90 – =	
2	March 22		80˚N		90 – =	
3	September 22		80˚S		90 – =	
4	June 22		80˚N		90 – =	
5	June 22		80˚S		90 – =	
6	June 22		0˚		90 – =	
7	December 22		80˚S		90 – =	
8	December 22		80˚N		90 – =	
9	December 22		23.5 ˚S		90 – =	
10	March 22		34˚N		90 – =	
11.	June 22		34˚N		90 – =	
12.	December 22		34˚N		90 – =	

More about Noon Sun Angles



This is a diagram of a house in Arizona. Pretend that the house is in southern Arizona at 33˚N. The diagram shows summer sun's rays at noon on the June 22nd Solstice and winter sun's rays at noon on t December 22nd Solstice.

13. What is the angle of the sun's rays at noon during the summer (June 22nd Solstice)? _____. Show your work here:

14. What is the angle of the sun's rays at noon during the winter (December 22nd Solstice)? _____. Show your work here:

15. The original diagram is not correct. The summer angle should both be more vertical and the winter angle should be shallower. Use a protractor to check the diagram, then correct the picture. Use the white ⌊ in the middle of the picture as the guide for your protractor.

16. Would you put a shade tree on the north or the south side of the house? Why?