

NAME \_\_\_\_\_

CLASS \_\_\_\_\_

## **WORKSHEET ON CELESTIAL SPHERE DIAGRAM**

Add the sun's path across the sky on the diagram below for

June 21,      March 21      Dec 21      Sept 23

Answer the following questions using the diagrams

1. On June 21 at 12:00 noon in New York State (NYS), in which direction will the observer's shadow lie on the ground?
2. On June 21 at 5 pm in NYS, in which direction will the observer's shadow lie on the ground?
3. On Dec 21 at 12:00 noon on the equator, in which direction will the observer's shadow lie on the ground?
4. On Dec 21 at 3pm in NYS, in which direction will the observer's shadow lie on the ground?
5. On June 21, at 10:00am on the 23.5 degrees South, in which direction will the observer's shadow lie on the ground?

6. Where will an observer's shadow be the longest? Circle the longest shadow

a) in NYS at 12 noon on March 21      or      in NYS at 12 noon on June 21

b) on the equator at noon on Sept 23      or      on the equator noon on June 21

c) on the Tropic of Capicorn on      or      on the equator at noon on June 21  
June 21

d) in NYS at 5pm, 9/23      or      in NYS at 11am on Dec 21

7. Make a generalized statement about a shadow's length over the surface of the globe and the position of the sun in the sky at solar noon

8. Make a generalized statement about a shadow's length over the surface of the globe and the time of day.