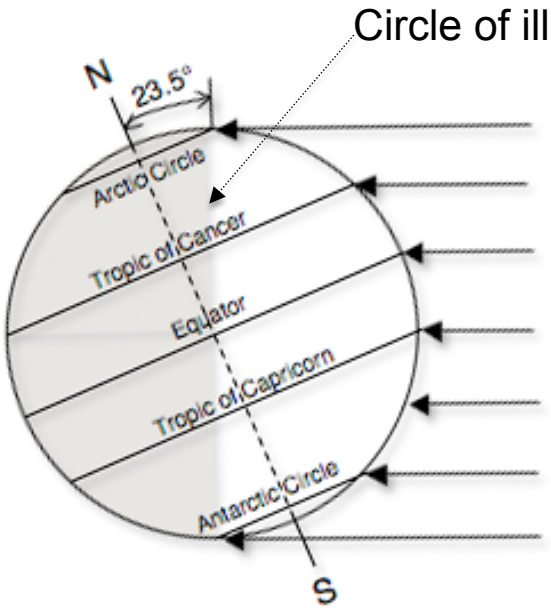
(1) At any particular place, solar noon is the time of day when the sun is highest in the sky. When does solar noon occur?

(A) Exactly half way between sunrise and sunset.
(B) At the summer solstice (June 21 or 22 in the Northern Hemisphere, December 21 or 22 in the Southern Hemisphere).
(C) At the time of the equinoxes (March 21 or 22 and September 21 or 22).
(D) Can't say in general--it depends on the latitude of the place.

(2) At any location on the circle of illumination, where does the sun appear to be in the sky?



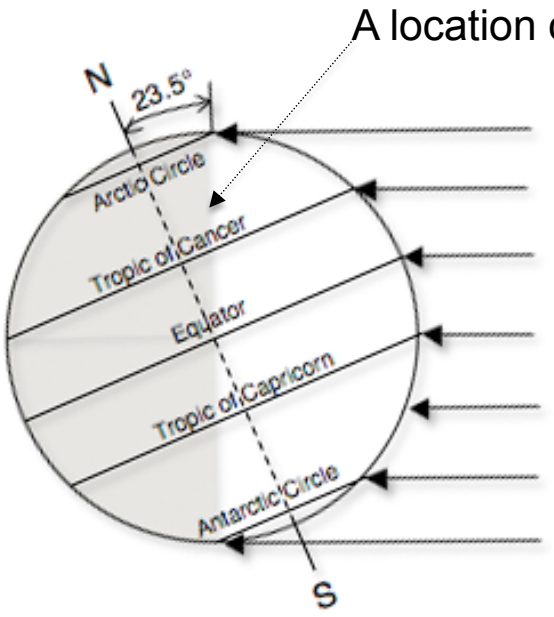
(A) At its highest point over the course of the day

(B) On the horizon

(C) Below the horizon

(D) Can't say in general—it varies with latitude and time of year.

(3) At the location on the earth indicated in the diagram, what is the sun doing in the sky?



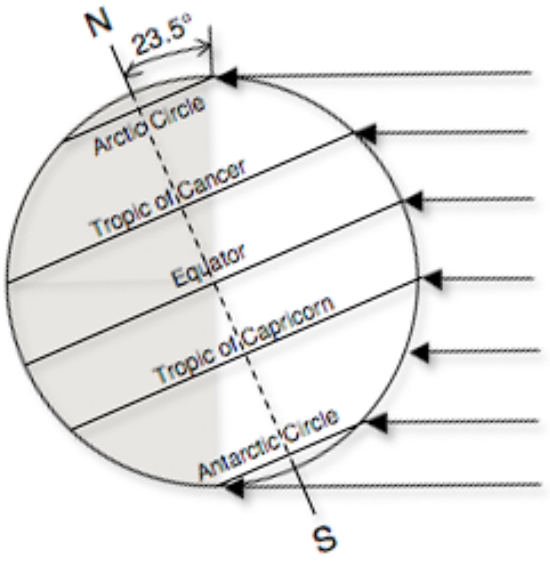
(A) It is rising (sunrise).

(B) It is setting (sunset).

(C) It is reaching its highest point and will start going down.

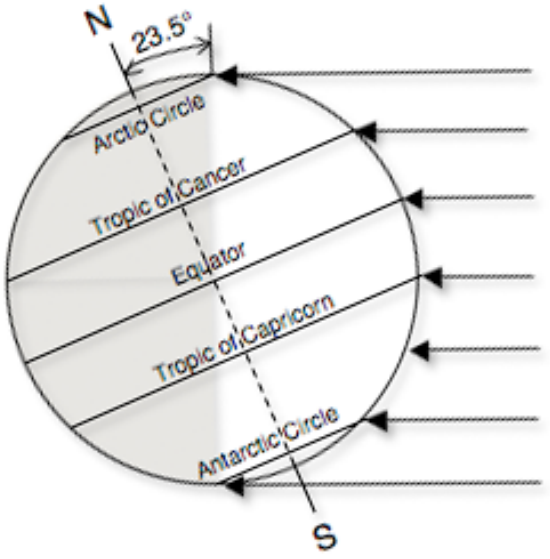
(D) Can't say in general—not enough information.

(4) At what locations on the diagram below is it solar noon?



(A) Everywhere along the axis of rotation.
(B) Everywhere along the circle of illumination.
(C) On the equator, at the right-hand edge of the diagram.
(D) On the Tropic of Capricorn, at the right-hand edge of the diagram.
(E) Everywhere along the right-hand edge, from the North Pole to the South Pole.

(5) At what locations on the diagram below is it solar midnight?



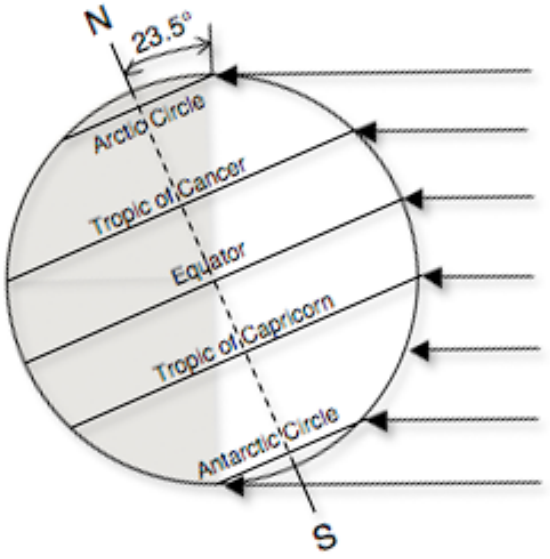
(A) Everywhere on the dark (left) half of the diagram.

(B) On the equator, at the left-hand edge of the diagram.

(C) On the Tropic of Cancer, at the left-hand edge of the diagram.

(D) Everywhere along the left-hand edge, from the North Pole to the South Pole.

(6) At what locations on the diagram below is it (solar) 6 am?



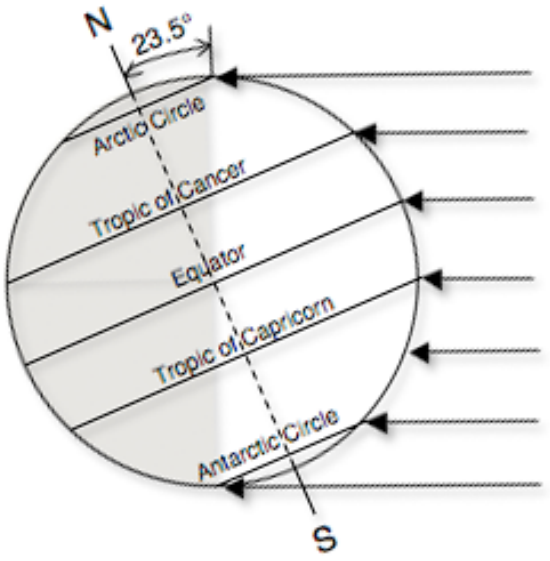
(A) Everywhere along the circle of illumination.

(B) At each latitude along the line represented by the axis of rotation.

(C) At each latitude, closer to solar noon than solar midnight.

(D) Can't tell--not enough information shown.

(7) At what location(s) on the diagram below does the sun appear directly overhead?



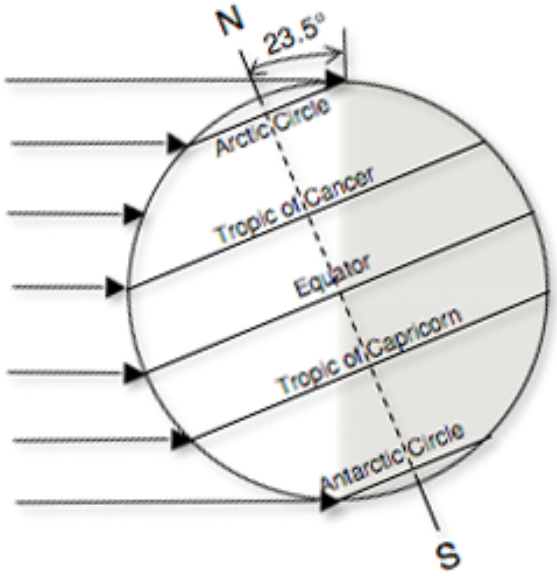
(A) Everywhere along the circle of illumination.

(B) At each latitude along the line represented by the axis of rotation.

(C) Along the right-hand edge, from the North Pole to the South Pole.

(D) At the Tropic of Capricorn, on the right-hand edge of the diagram.

(8) At what location(s) on the diagram below does the sun appear directly overhead?



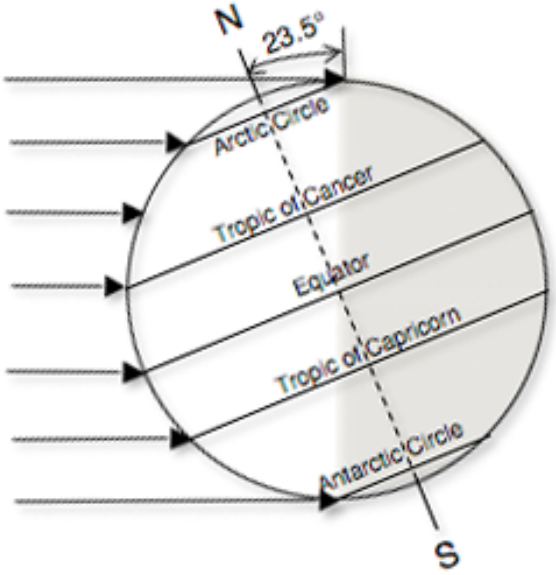
(A) On the Tropic of Capricorn, on the left-hand edge of the diagram.

(B) On the equator, on the left-hand edge of the diagram.

(C) On the Tropic of Cancer, on the left-hand edge of the diagram.

(D) On the North Pole.

(9) The diagram below shows the earth at the June solstice. At the latitude of San Francisco at solar noon, where does the sun appear to be in the sky?



(A) Directly overhead.

(B) Pretty high, but not directly overhead.

(C) Not very high above the horizon.

(D) On the horizon.