Consider the setup of a Ferris wheel in an amusement park. The wheel is turning in a counter-clockwise manner. Contrary to the illustration, not all seats are aligned horizontally; i.e., parallel to the $x$-axis.

![Diagram of a Ferris wheel with a seat labeled A]

The orientation (normal, $\perp$) of the seat’s surface as it is passes $A$ is

A) parallel to the $x$-axis.
B) in the first and third quadrants.
C) parallel to the $y$-axis.
D) in the second and fourth quadrants.
Explanation: As the chair rises passing by A, apply the $F = ma$ formula to the rider.

The situation is shown in the sketch, where $F_{set} + mg = ma_{cp}$.

Notice that the orientation of the seat is perpendicular to $F_{seat}$.

So it should be in the first and third quadrants.

Answer B.

Note: This Ferris Wheel is spinning too fast for safety.

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