From TP A.12, right sidespin imparted to the CB, based on CB speed \( v \) is:

\[
\omega_y = \frac{5 \cdot x \cdot v}{2 \cdot R^2}
\]

and backspin imparted to the CB is:

\[
\omega_x = \frac{-5 \cdot y \cdot v}{2 \cdot R^2}
\]

From TP A.1, the final CB speed after the CB stops sliding (due to drag) and achieves natural forward roll is:

\[
v' = \frac{5}{7} v - \frac{2}{7} R \cdot \omega_x = \frac{5}{7} v - \frac{2}{7} R \left( \frac{-5 y v}{2 R^2} \right) = \frac{5}{7} v \left( 1 + \frac{y}{R} \right)
\]

To get the largest effective sidespin, the spin-to-speed ratio after drag should be as high as possible. The final spin-speed ratio (AKA spin-rate-factor or SRF) is:

\[
SRF = \frac{\omega_y}{\left( \frac{v'}{R} \right)} = \frac{\frac{5 \cdot x \cdot v}{2 \cdot R^2}}{\frac{5}{7} v \left( 1 + \frac{y}{R} \right)} = \frac{7 x}{2 \cdot (R + y)}
\]
For the maximum possible spin, the tip contact point must be at the miscue limit, which is a half-ball radius from center. In other words, the tip contact point must be on the miscue-limit circle given by the following equation:

\[ x^2 + y^2 = \left( \frac{R}{2} \right)^2 \]

Finding the maximum of the spin-speed ratio is equivalent to finding the maximum of the square of the spin-speed ratio (Z):

\[ SRF^2 = \frac{7 \cdot x^2}{2 \cdot (R+y)^2} = \frac{7 \cdot \left( \frac{R}{2} \right)^2 - y^2}{2 \cdot (R+y)^2} \]

The maximum occurs where the derivative of \( SRF^2 \) is 0:

\[
\frac{d}{dy} \left( \frac{7 \cdot \left( \frac{R}{2} \right)^2 - y^2}{2 \cdot (R+y)^2} \right) = 0 \quad \text{solve, } y = \frac{R}{4}
\]

The value of x corresponding to this is:

\[
x := \sqrt{\left( \frac{R}{2} \right)^2 - y^2} \quad \text{simplify, } x = \frac{\sqrt{3} \cdot \sqrt{R^2}}{4} \]

Per Ron Shepard's "Amateur Physics for the Amateur Pool Player" (Problem 3.7), it can be shown that this point \((x, y)\) lies on a "base circle" through the resting point and center of the CB:

\[
x^2 + \left( y + \frac{R}{2} \right)^2 = \frac{R^2}{4}
\]

Per the illustration above, the intersection of the miscue-limit and base circles provides an easy way to visualize the required tip contact point for maximum drag-enhanced-spin.