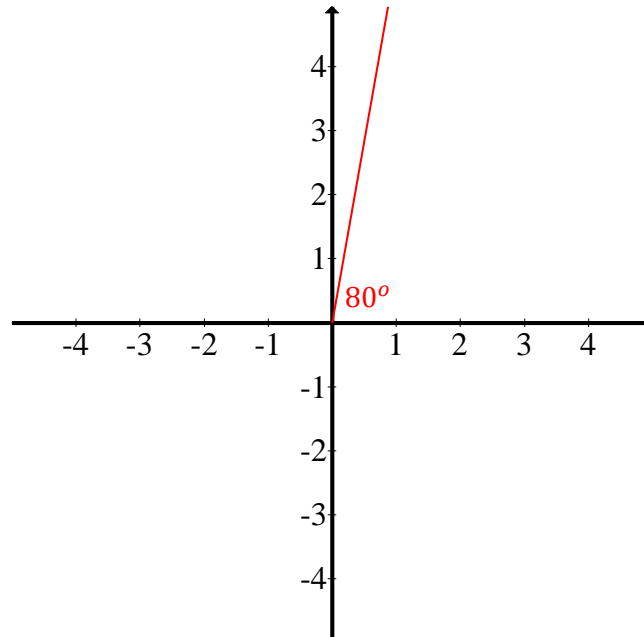


1) On the axis below illustrate an angle of 80° in the standard position.



2) A Frisbee is spinning at a rate of 200 revolutions per minute. What is its angular velocity expressed in degrees per minute?

First note that one revolution is spinning all the way around until it gets back to where it started. That is 360° . Hence if we have 200 of these per minute, we multiply $200 \cdot 360 = 72000$ to find that the Frisbee is spinning at 72000° per minute.

OR

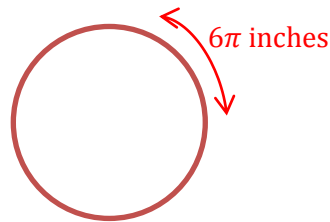
if you do the unit conversion explicitly:

$$\frac{200\text{revs}}{\text{min}} \cdot \frac{360^\circ}{\text{rev}} = \frac{72000^\circ}{\text{min}}$$

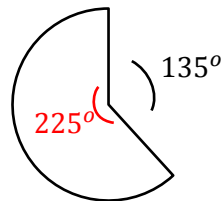
3) A paper cup is created by taking a circular piece of waxed paper with a 3 inch radius, cutting out a section, and gluing the cut edges together. (Waxed paper is used to prevent the paper from absorbing the water). Find and properly express the length of the rim of the cup.



Here note that the rim of the cup comes from the circumference of the circle – or rather what is left of it. The whole circle has a circumference of $C = 2\pi r = 6\pi$ as shown below.



However, we have a piece missing. More precisely we have 135° of the 360° missing, leaving 225° left:



The ratio of what we're interested in is then $\frac{225}{360}$:

$$6\pi \text{ inches} \cdot \frac{225}{360} \approx 11.78 \text{ inches}$$