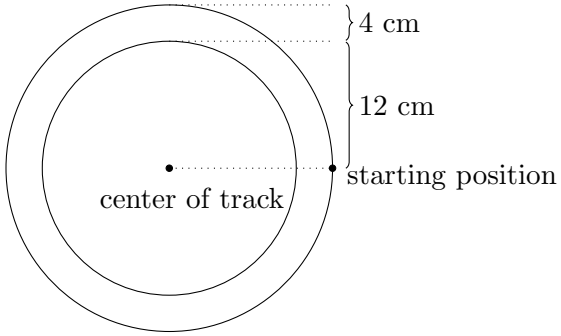
6. [8 points] Gretchken has made a circular running track to test the metabolism of ants and termites receiving doses of Chemical Y. The track has an inner radius of 12 cm, and a thickness of 4 cm as depicted below. **Please leave your answers in exact form for all parts of this problem.**



a. [4 points] First, an ant runs counterclockwise following the *outer* edge of the track. If the ant runs at a constant speed of 4.8 cm/second, what is the total angular distance (in radians) that it covers in 5 minutes?

The ant covers _____ radians in 5 minutes.

b. [4 points] Next, a termite run counterclockwise following the *inner* edge of the track for a total angular distance of $\frac{27\pi}{5}$ radians. How many times does it pass its starting position? What is the additional angular distance that it covers on its last, incomplete lap?

The termite passes the starting point _____ times.

It covers _____ radians after passing the starting point for the last time.