5. [7 points] The parts of this problem are unrelated.
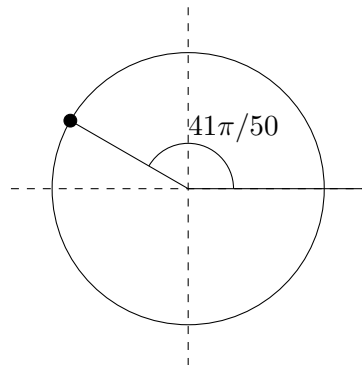
a. [2 points] Give another angle θ **in radians**, with $0 \le \theta \le 2\pi$, with the same value for cosine as the angle shown below:

Solution: Another angle giving the same cosine value is

$$2\pi - 41\pi/50 = 59\pi/50$$

b. [5 points] The graph of a function $y = M(x)$ has the following properties:

- The amplitude is 4
- The midline is $y = 2$
- The period is 3.
- $y = M(x)$ has a minimum at $x = 0$.

Consider the function $V(x) = 2M(-4x) - 1$. Find the following. For any that cannot be determined from the given information, write "cannot be determined".

   i. The amplitude of $y = V(x)$.
  ii. The midline of $y = V(x)$.
 iii. The period of $y = V(x)$.
 iv. The y-intercept of $y = V(x)$.

Solution:

- The amplitude is 8.
- The midline is $y = 3$.
- The period is 3/4.
- The y-intercept is -5.