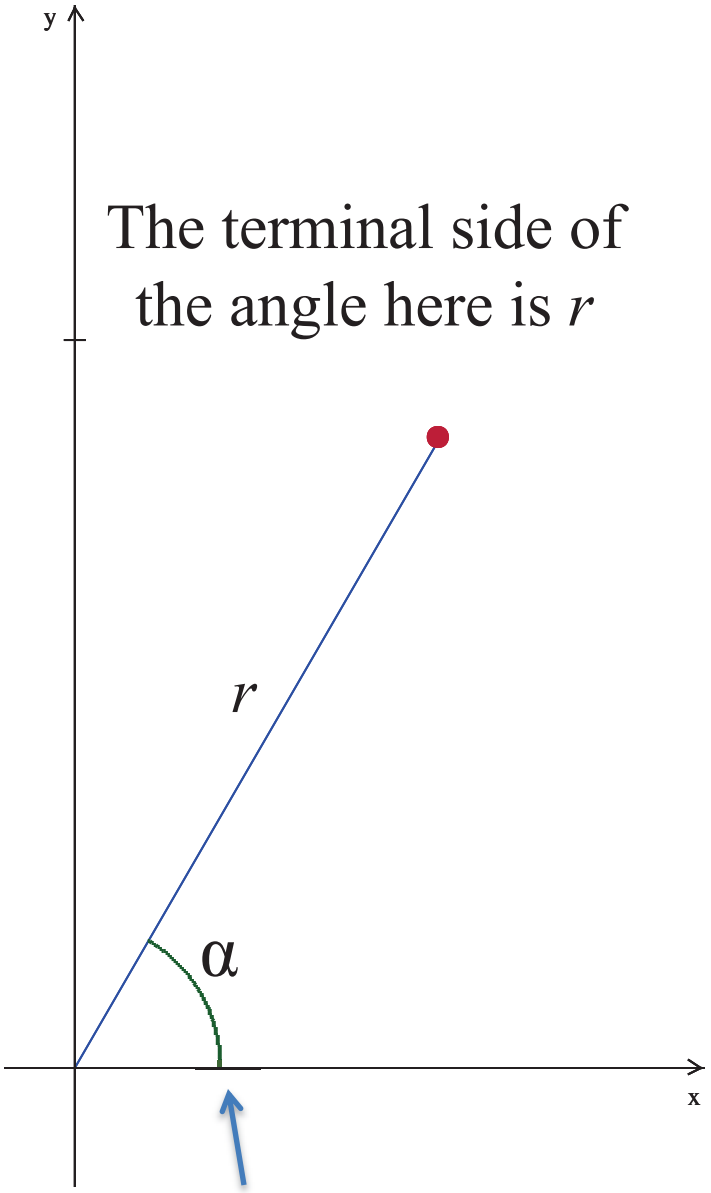


The terminal side of the angle here is *r*

We'll worry about the length of *r* later

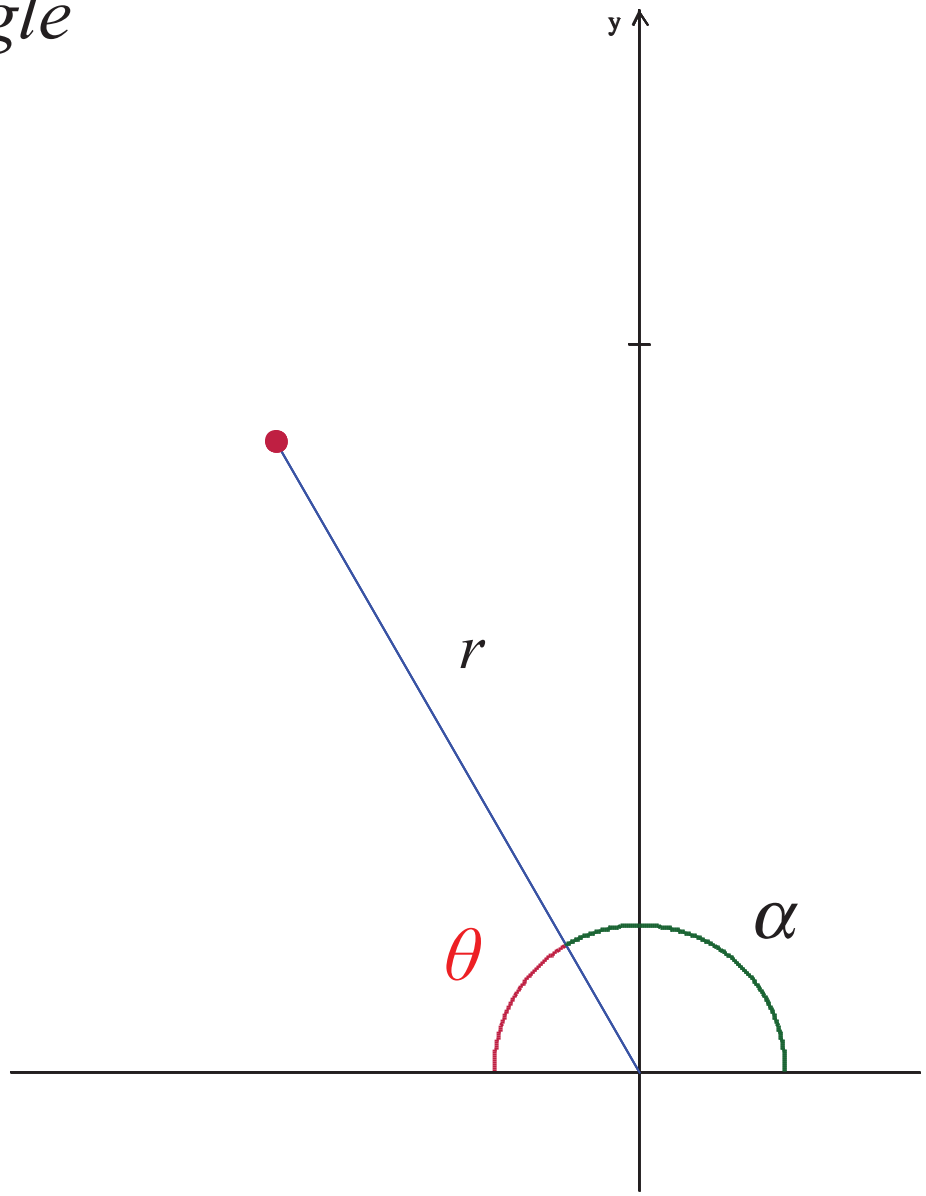
Starting α from the positive *x*-axis is called <u>Standard Position</u>

θ is called the *reference angle*

reference angle

The acute angle made between the terminal side (r) and the x-axis

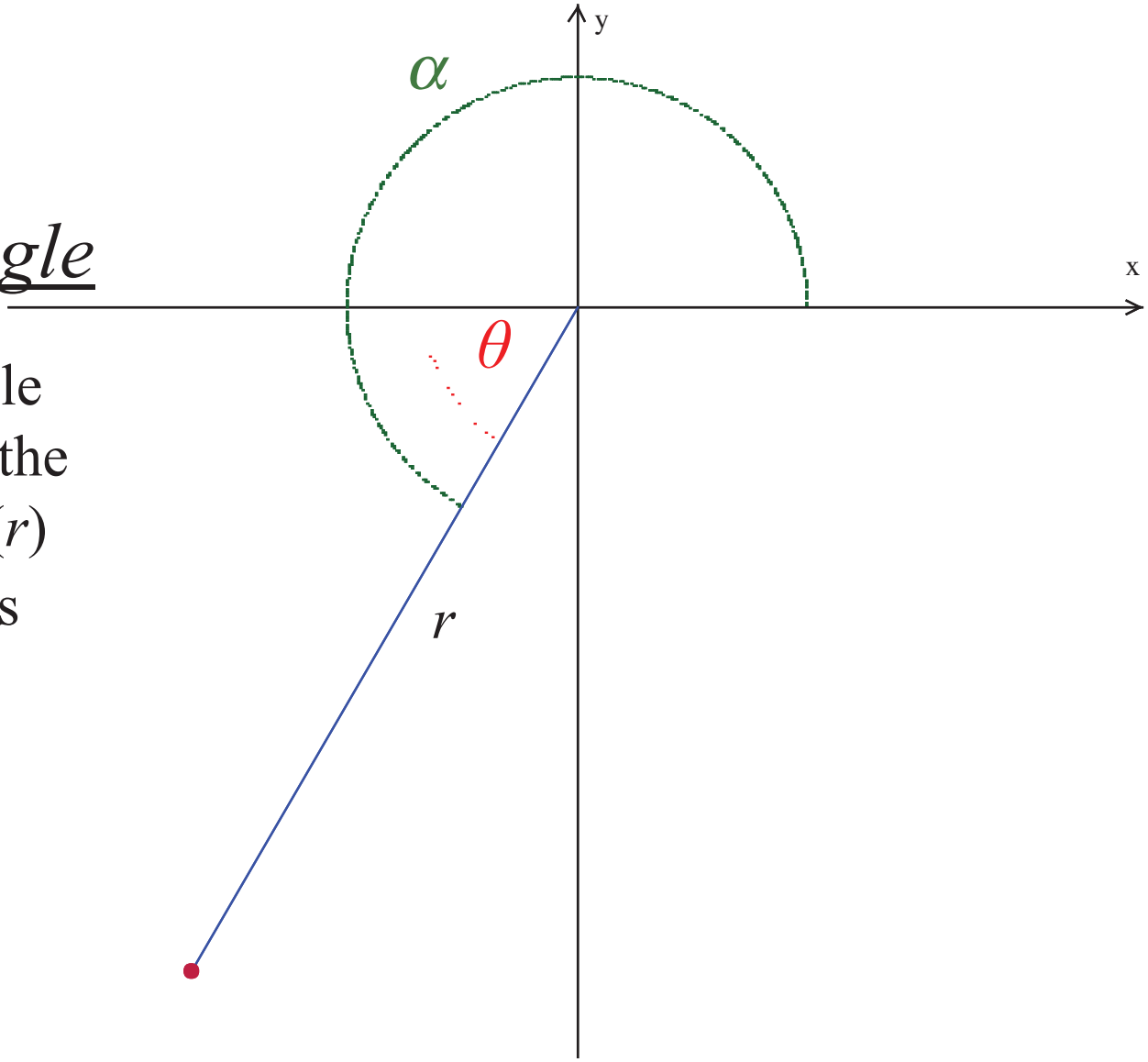
More on this later



θ is called the *reference angle*

reference angle

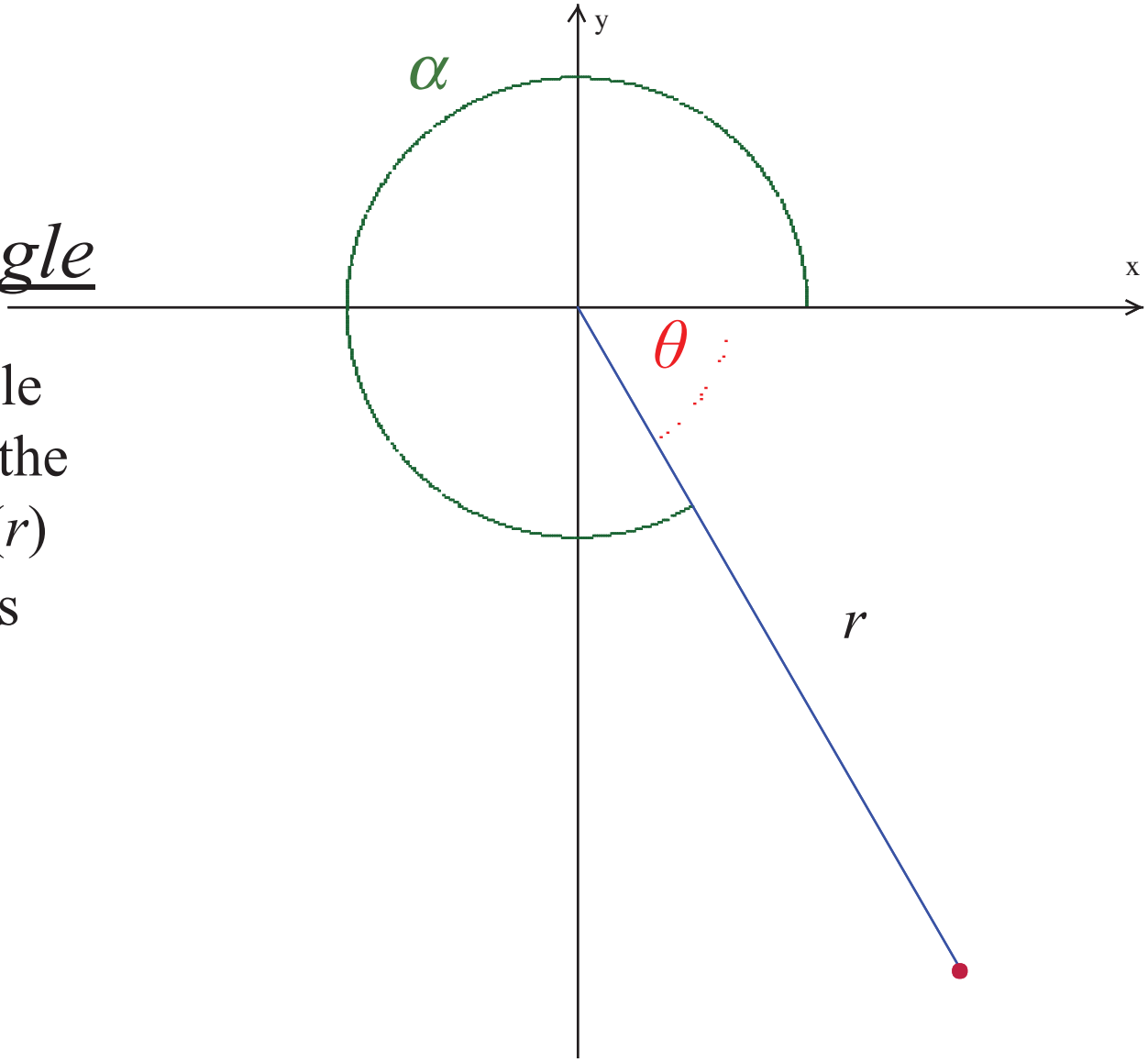
The acute angle made between the terminal side (r) and the x-axis



θ is called the *reference angle*

reference angle

The acute angle made between the terminal side (r) and the x-axis

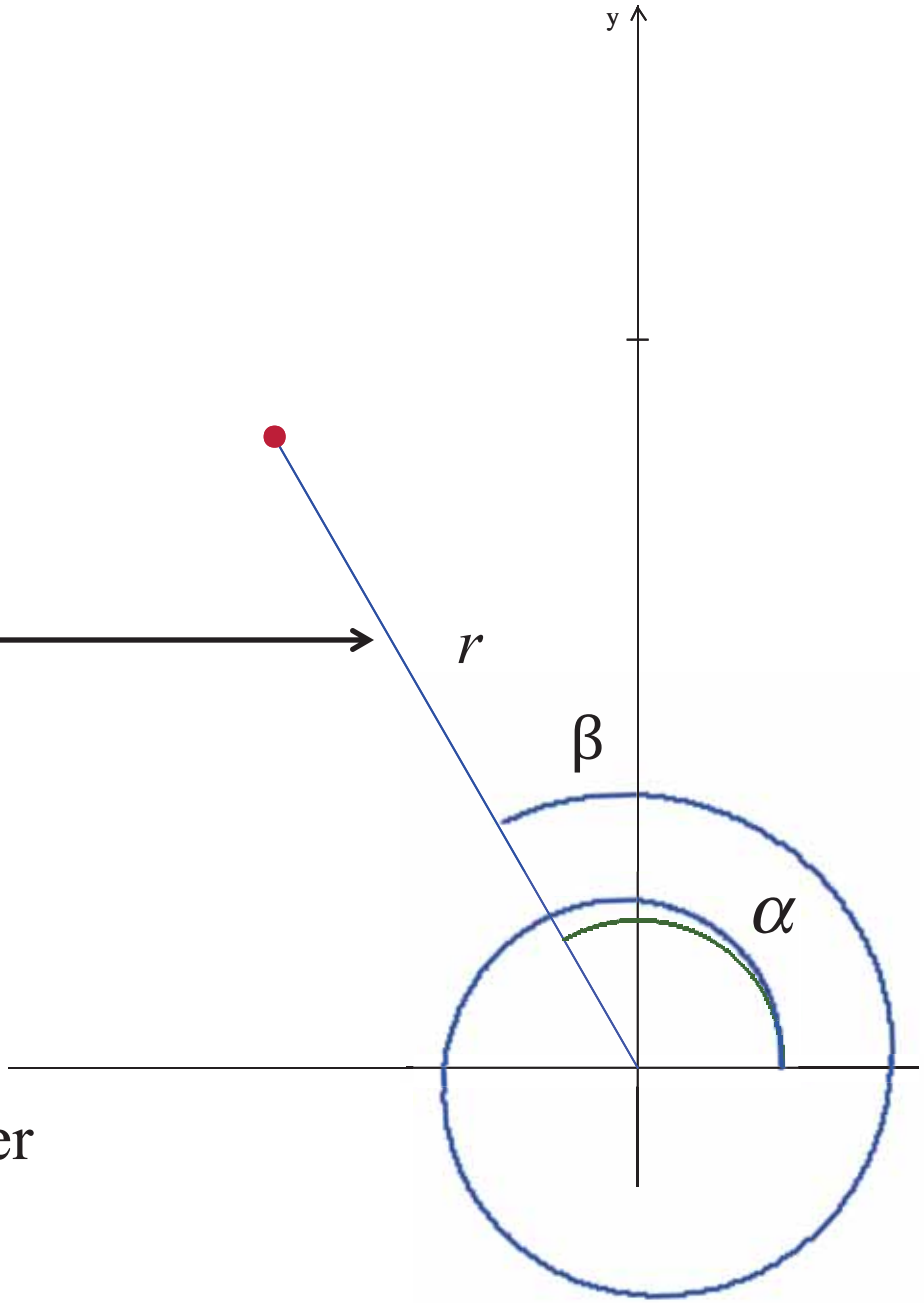


Co-terminal angles

Angles that have the same initial and terminal sides

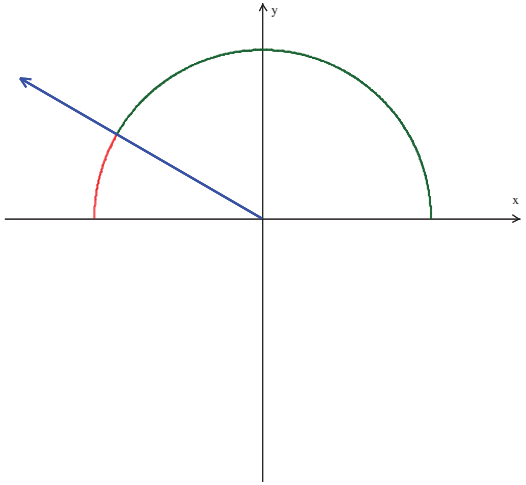
α and β are examples of co-terminal angles.

Co-terminal angles always differ by multiples of 360°

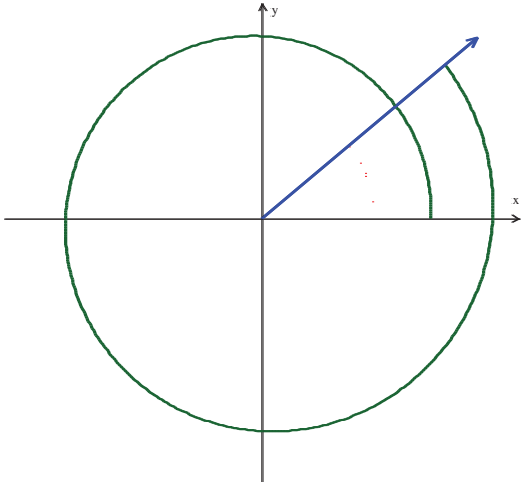


Draw the given angles on the *x*-*y* plane

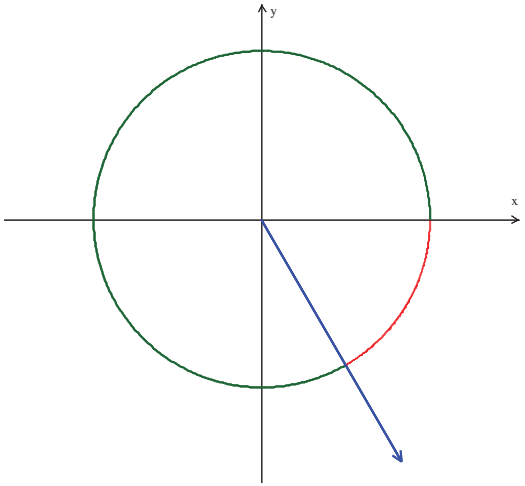
150° reference angle = 30°



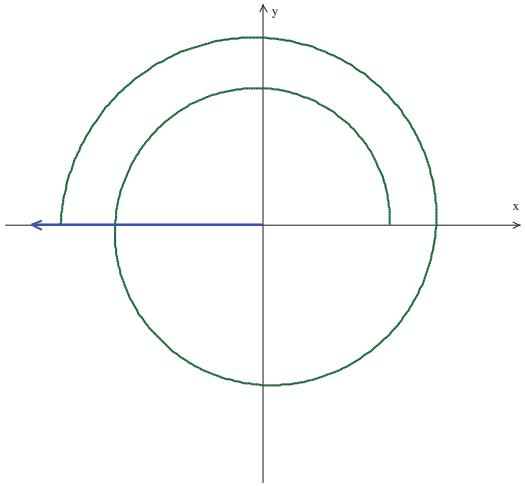
400° reference angle = 40°



300° reference angle = 60°

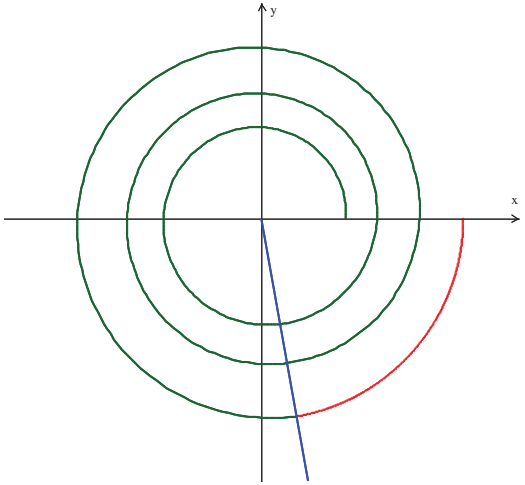


540° reference angle = 0°



Draw the given angles on the *x*-*y* plane

1000° reference angle = 80° –170°



Use your calculator and multiples of 360° to determine how many rotations

–45° –250°

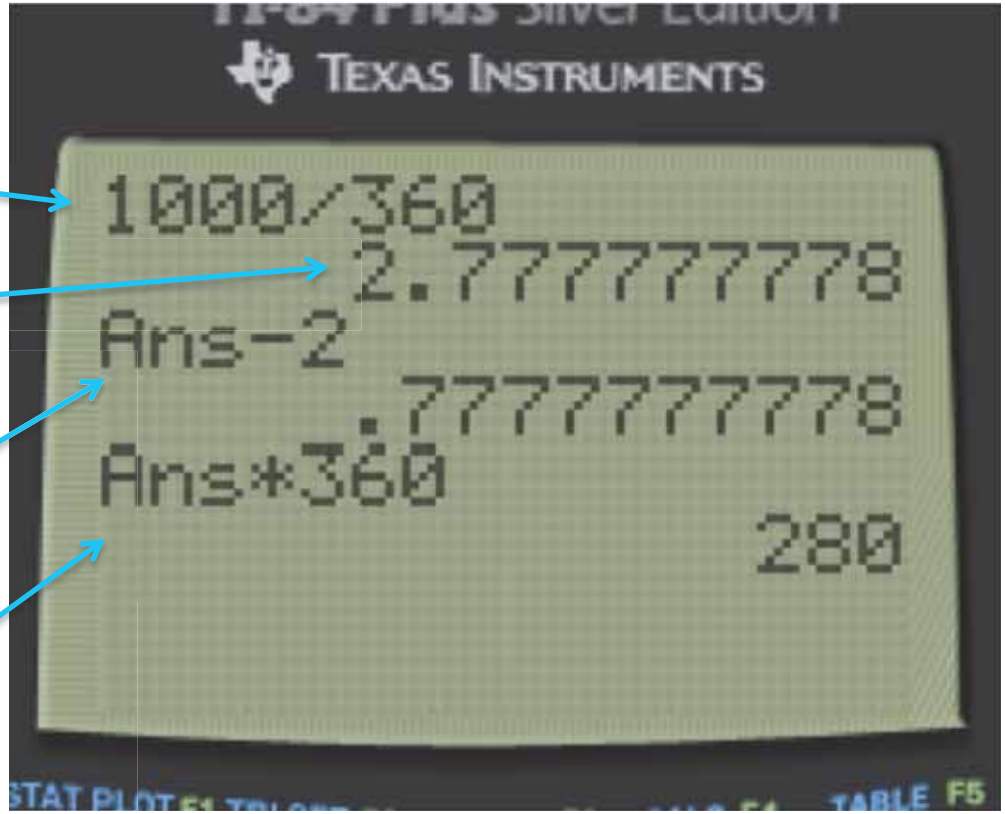
First divide the degree measure by 360 to determine the number of rotations

So the angle is two rotations clockwise plus some fraction of 360°

We subtract 2 so that we are just left with the decimal

Then we multiply that decimal by 360 to find the number of degrees in the partial rotation.

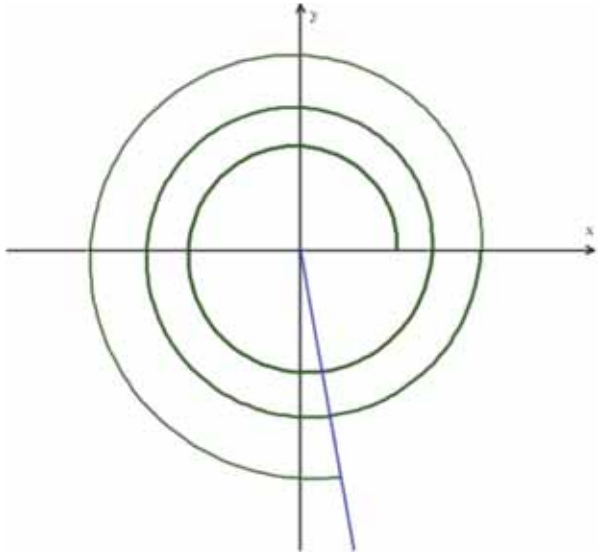
And we know that 280° is in Quadrant IV



One Rotation

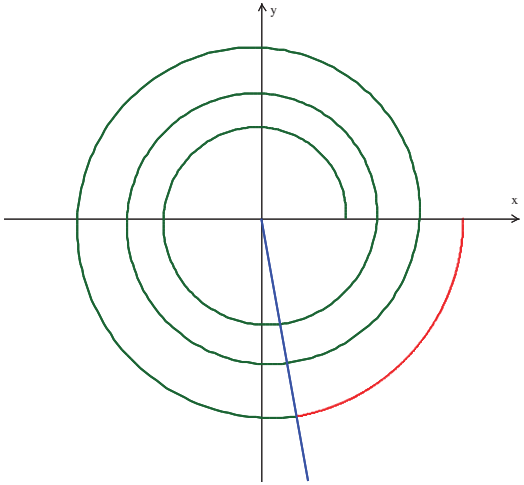
Two Rotations

Then add 280°



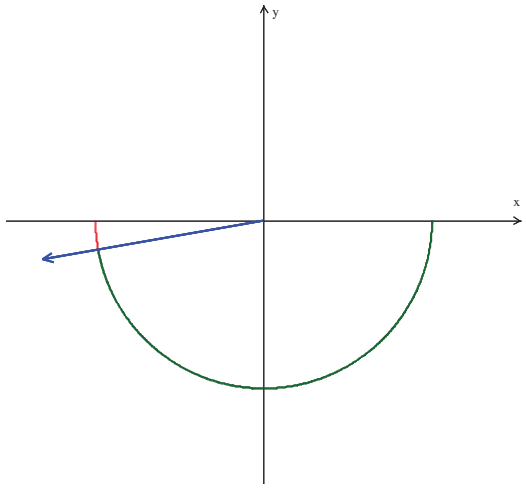
Draw the given angles on the *x*-*y* plane

1000° reference angle = 80°

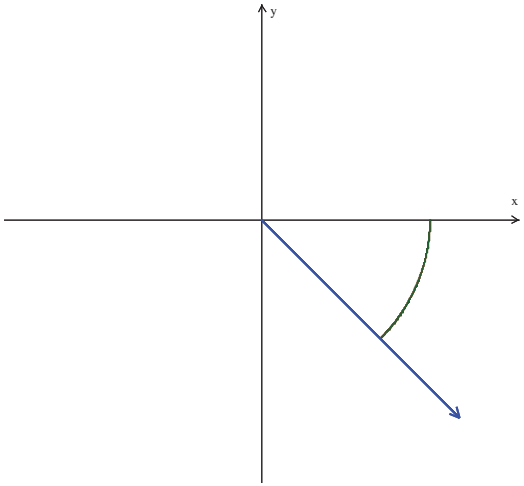
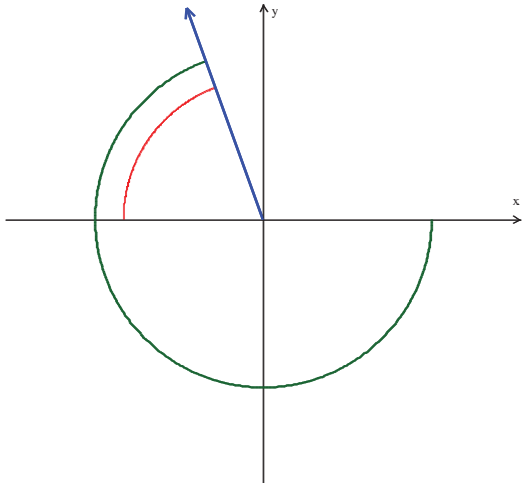


Use your calculator and multiples of 360° to determine how many rotations

−170° reference angle = 10°



−45° reference angle = 45°



−250° reference angle = 70°