

The Unit Circle

Below is the graph of the points (x,y) which satisfy the equation $x^2+y^2=1$. This is precisely the graph of a circle of radius 1 centered at the origin.

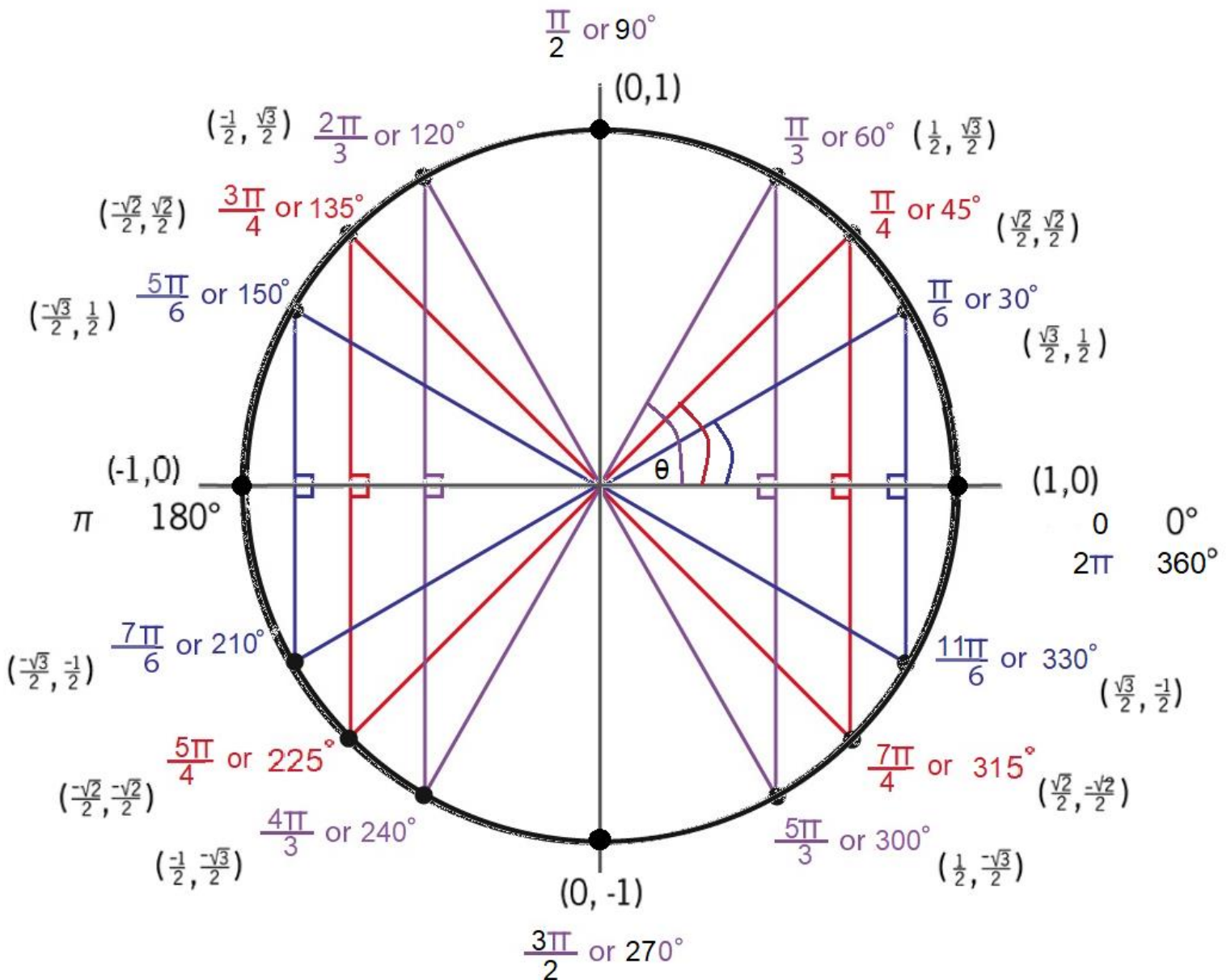
Each point (x,y) corresponds to an angle between 0 and 2π if we let the initial side be the x-axis and the terminal side by the ray that begins at the origin and passes through the point (x,y) .

Some of these angles form popular 30-60-90 or 45-45-90 right triangles as shown below. Notice that x is the length of the base of such a triangle (length of side adjacent to θ) and y is the length of the height (length of side opposite to θ). Then

$$x = \cos(\theta)$$

and

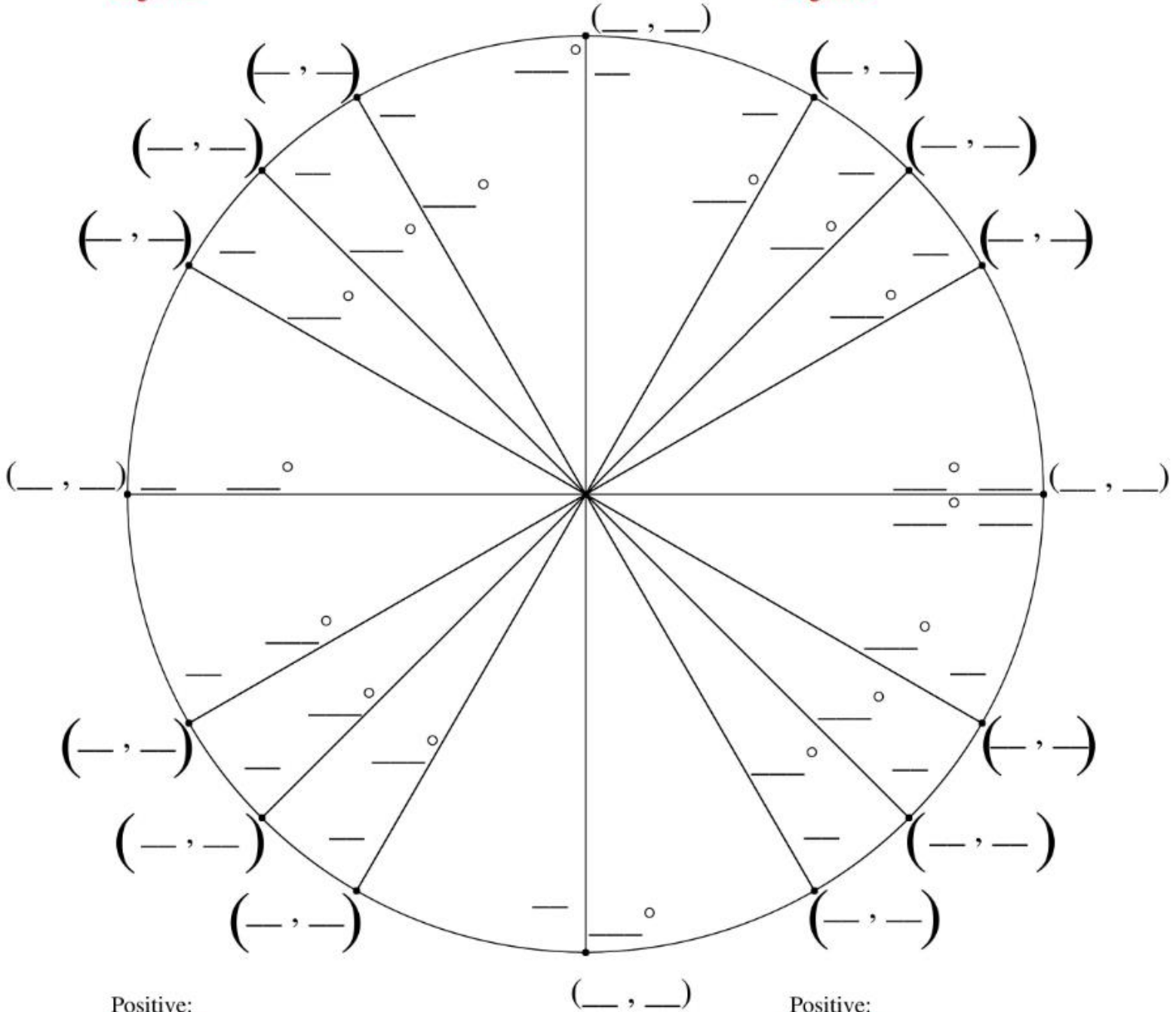
$$y = \sin(\theta).$$



Can you remember the points corresponding to popular angles on the Unit Circle? Try to fill out the Unit Circle angles and point coordinates below!

Positive:
Negative:

Positive:
Negative:



Positive:
Negative:

Positive:
Negative: