$(x, y) = (\cos(\theta), \sin(\theta))$
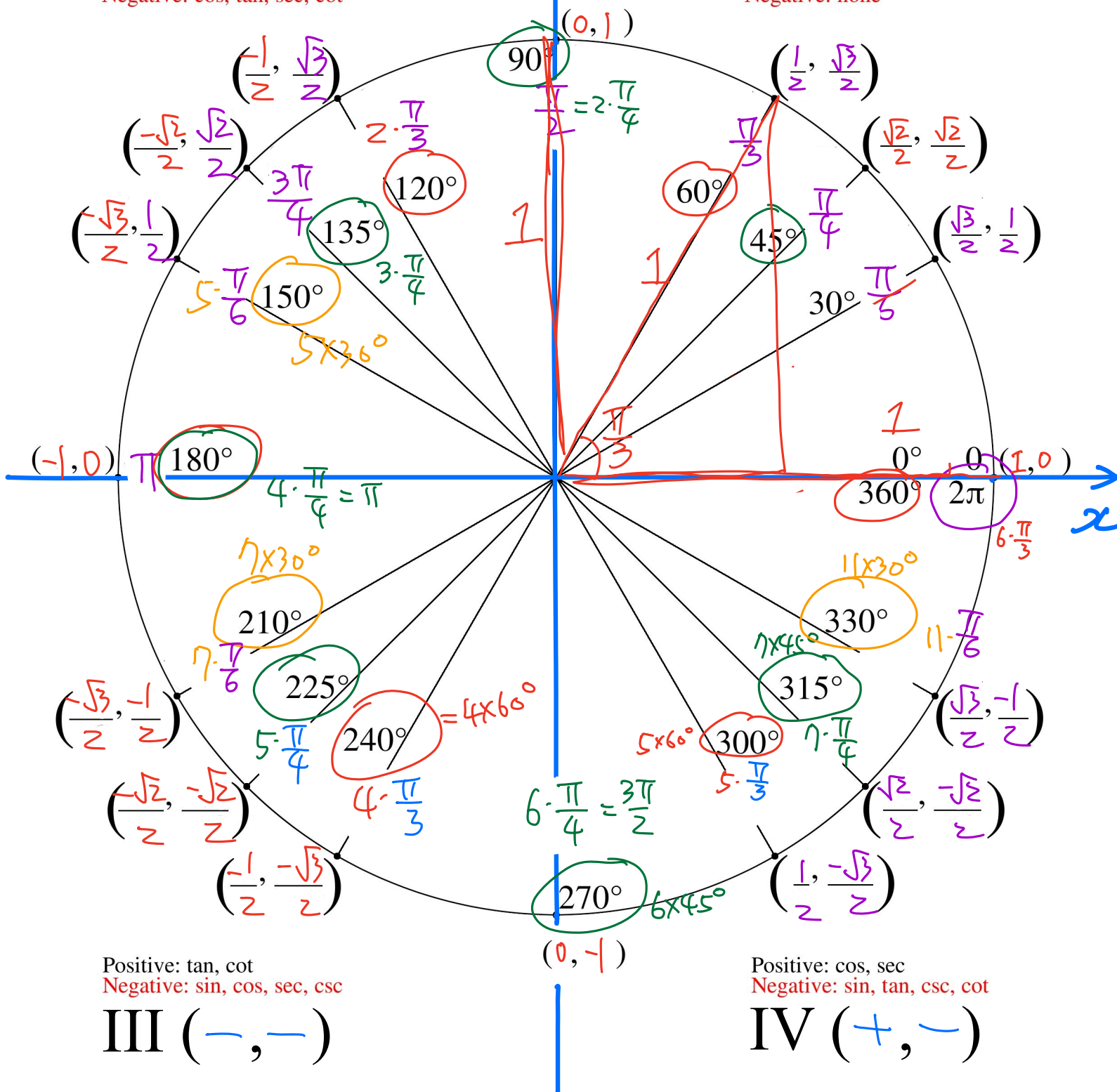θ is an angle

The Unit Circle

II $(-, +)$

Positive: sin, csc
Negative: cos, tan, sec, cot

I $(+, +)$

Positive: sin, cos, tan, sec, csc, cot
Negative: none

$(0, 1)$

90°

$\left(\dfrac{-1}{2}, \dfrac{\sqrt{3}}{2}\right)$

$\left(\dfrac{-\sqrt{2}}{2}, \dfrac{\sqrt{2}}{2}\right)$

$\left(\dfrac{-\sqrt{3}}{2}, \dfrac{1}{2}\right)$

$\left(\dfrac{1}{2}, \dfrac{\sqrt{3}}{2}\right)$

$\left(\dfrac{\sqrt{2}}{2}, \dfrac{\sqrt{2}}{2}\right)$

$\left(\dfrac{\sqrt{3}}{2}, \dfrac{1}{2}\right)$

$\dfrac{\pi}{2} = 2 \cdot \dfrac{\pi}{4}$

$2 \cdot \dfrac{\pi}{3}$ 120°

$\dfrac{3\pi}{4}$ 135°

$\dfrac{3 \cdot \pi}{4}$

$5 \cdot \dfrac{\pi}{6}$ 150°

$5 \times 30°$

60° $\dfrac{\pi}{3}$

45° $\dfrac{\pi}{4}$

30° $\dfrac{\pi}{6}$

1   1   1

$\dfrac{\pi}{3}$

$(-1, 0)$ π 180°

$4 \cdot \dfrac{\pi}{4} = \pi$

0°   0 $(1, 0)$

360° 2π

$6 \cdot \dfrac{\pi}{3}$

$7 \times 30°$

210°

$7 \cdot \dfrac{\pi}{6}$

225°

$5 \cdot \dfrac{\pi}{4}$

240° $= 4 \times 60°$

$4 \cdot \dfrac{\pi}{3}$

$6 \cdot \dfrac{\pi}{4} = \dfrac{3\pi}{2}$

$5 \times 60°$ 300°

$5 \cdot \dfrac{\pi}{3}$

$7 \times 45°$ 315°

$7 \cdot \dfrac{\pi}{4}$

$11 \times 30°$ 330°

$11 \cdot \dfrac{\pi}{6}$

$\left(\dfrac{-\sqrt{3}}{2}, \dfrac{-1}{2}\right)$

$\left(\dfrac{-\sqrt{2}}{2}, \dfrac{-\sqrt{2}}{2}\right)$

$\left(\dfrac{-1}{2}, \dfrac{-\sqrt{3}}{2}\right)$

$\left(\dfrac{\sqrt{3}}{2}, \dfrac{-1}{2}\right)$

$\left(\dfrac{\sqrt{2}}{2}, \dfrac{-\sqrt{2}}{2}\right)$

$\left(\dfrac{1}{2}, \dfrac{-\sqrt{3}}{2}\right)$

270° $6 \times 45°$

$(0, -1)$

Positive: tan, cot
Negative: sin, cos, sec, csc

III $(-, -)$

Positive: cos, sec
Negative: sin, tan, csc, cot

IV $(+, -)$

① $(x, y) = (\cos\theta, \sin\theta)$

cos⊖ , sin⊖

② $\theta = \frac{\cdot}{6}\pi$ $\left(\theta = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}\right)$ $\pm\frac{\sqrt{3}}{2}$ $\pm\frac{1}{2}$

$\theta = \frac{\cdot}{4}\pi$ $\left(\theta = \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}\right)$ $\pm\frac{\sqrt{2}}{2}$ $\pm\frac{\sqrt{2}}{2}$

$\theta = \frac{\cdot}{3}\pi$ $\left(\theta = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}\right)$ $\pm\frac{1}{2}$ $\pm\frac{\sqrt{3}}{2}$

$\theta = \frac{\cdot}{2}\pi$ $\left(\theta = \frac{\pi}{2}, \frac{3\pi}{2}\right)$ 0 ± 1

$\theta = \pi, 2\pi, 0$ ± 1 0