R → D

- Divide by π *
- Multiply by 180°

DRILL

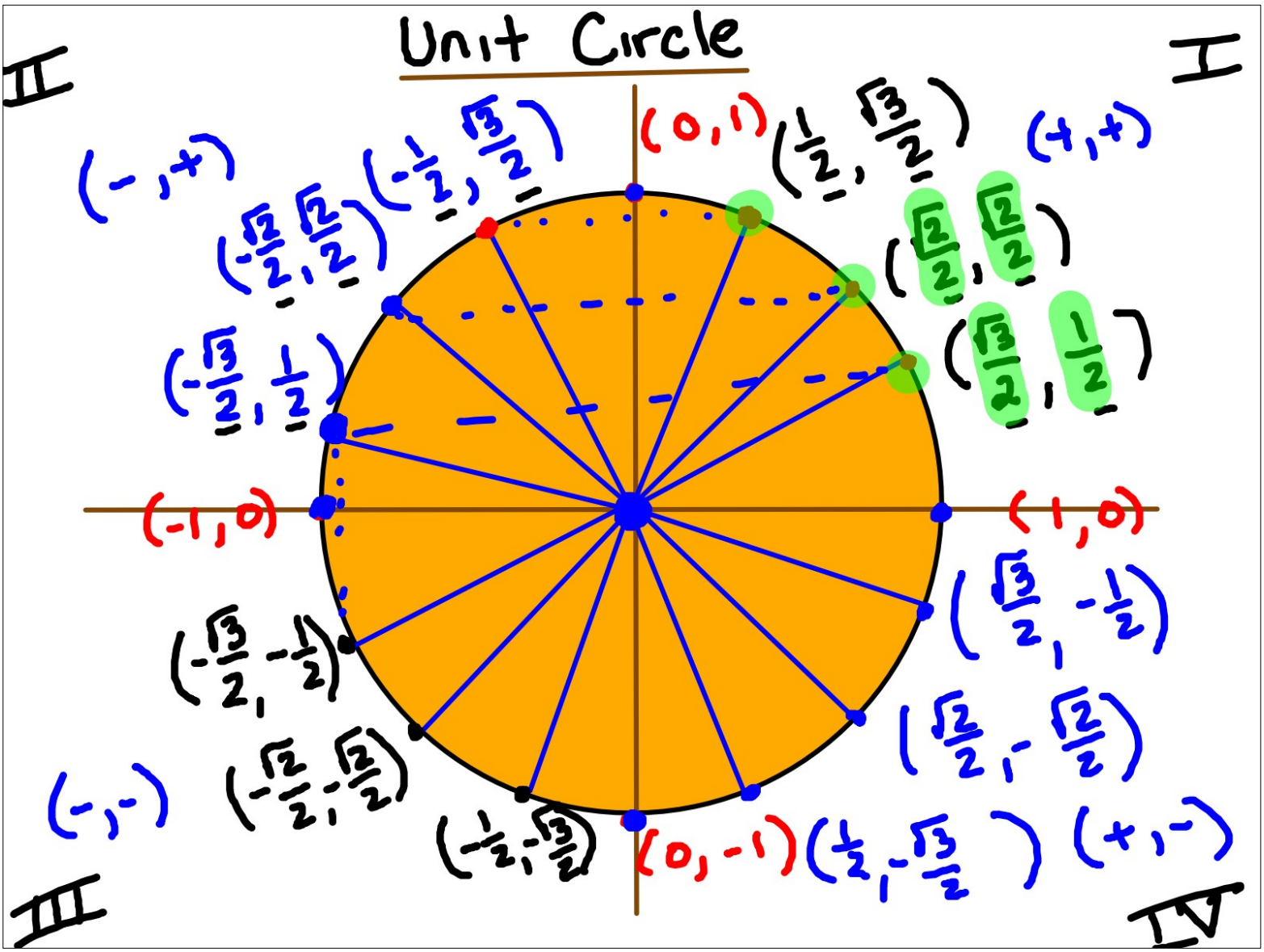
① Convert from Radians to Degrees.

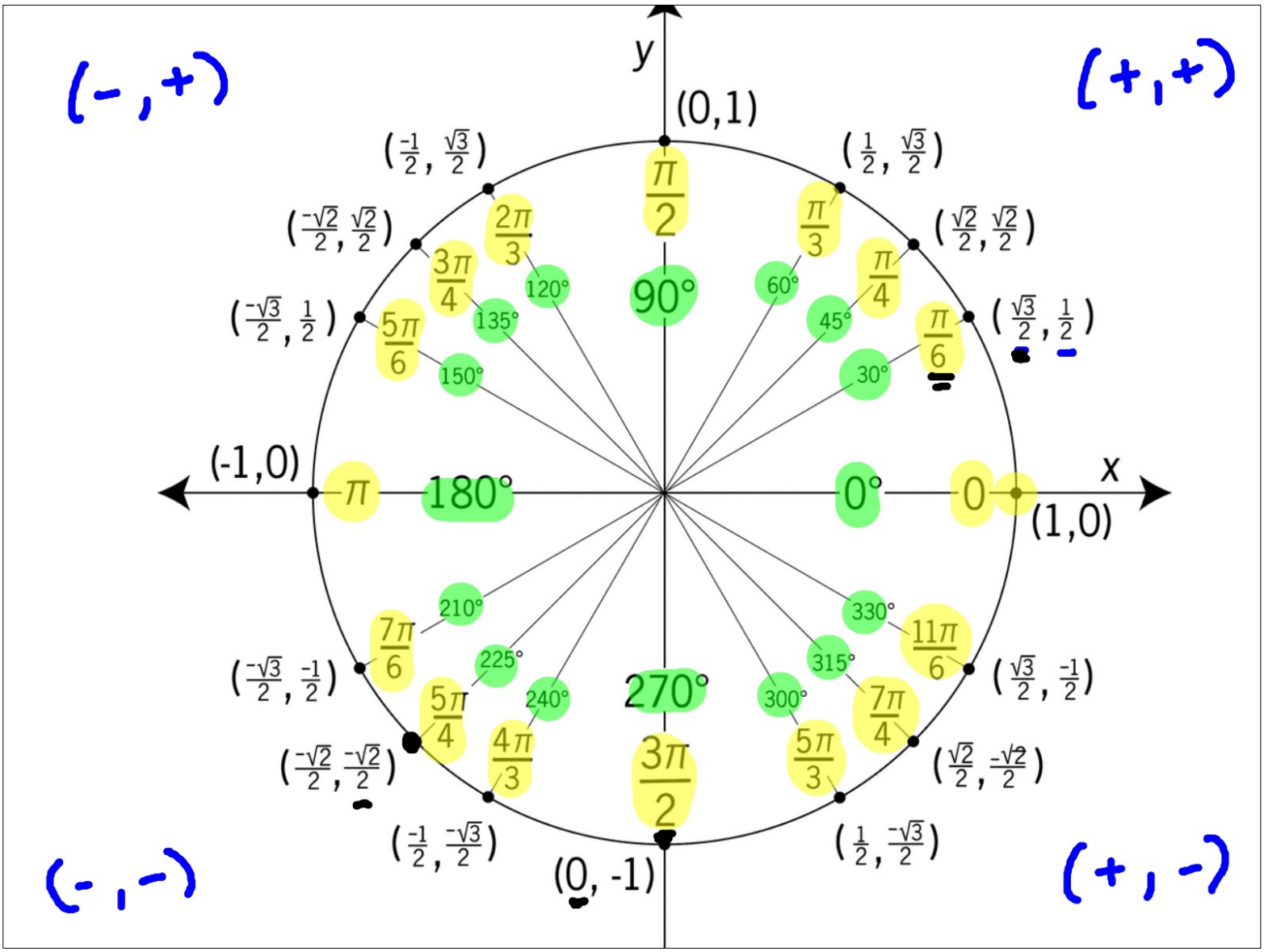
$$\frac{5\pi}{4} \rightarrow \frac{5\pi}{4\pi} \rightarrow \frac{5}{4}(180) \Rightarrow \boxed{225^\circ}$$

② Convert from Degrees to Radians ← D

$$240^\circ \rightarrow \frac{240\pi}{180} = \boxed{\frac{4\pi}{3}}$$

- Multiply by π
- Divide by 180
- Simplify

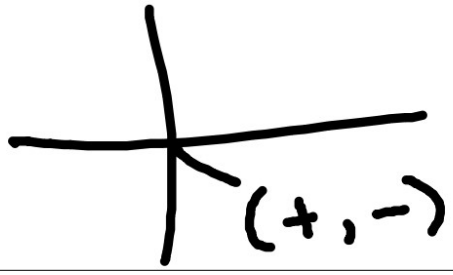

Unit Circle
II
I
III
IV
(0,1)
$(\frac{1}{2},\frac{\sqrt{3}}{2})$
$(-\frac{1}{2},\frac{\sqrt{3}}{2})$
$(\frac{\sqrt{2}}{2},\frac{\sqrt{2}}{2})$
$(-\frac{\sqrt{2}}{2},\frac{\sqrt{2}}{2})$
$(\frac{\sqrt{3}}{2},\frac{1}{2})$
$(-\frac{\sqrt{3}}{2},\frac{1}{2})$
(-1,0)
(1,0)
$(\frac{\sqrt{3}}{2},-\frac{1}{2})$
$(-\frac{\sqrt{3}}{2},-\frac{1}{2})$
$(\frac{\sqrt{2}}{2},-\frac{\sqrt{2}}{2})$
$(-\frac{\sqrt{2}}{2},-\frac{\sqrt{2}}{2})$
$(-\frac{1}{2},-\frac{\sqrt{3}}{2})$
(0,-1)
$(\frac{1}{2},-\frac{\sqrt{3}}{2})$
(-,+)
(+,+)
(-,-)
(+,-)


(-, +)
(+, +)
(- , -)
(+ , -)
y
x
(0,1)
(1,0)
(-1,0)
(0, -1)
$(\frac{-1}{2}, \frac{\sqrt{3}}{2})$
$(\frac{1}{2}, \frac{\sqrt{3}}{2})$
$(\frac{-\sqrt{2}}{2}, \frac{\sqrt{2}}{2})$
$(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2})$
$(\frac{-\sqrt{3}}{2}, \frac{1}{2})$
$(\frac{\sqrt{3}}{2}, \frac{1}{2})$
$(\frac{-\sqrt{3}}{2}, \frac{-1}{2})$
$(\frac{\sqrt{3}}{2}, \frac{-1}{2})$
$(\frac{-\sqrt{2}}{2}, \frac{-\sqrt{2}}{2})$
$(\frac{\sqrt{2}}{2}, \frac{-\sqrt{2}}{2})$
$(\frac{-1}{2}, \frac{-\sqrt{3}}{2})$
$(\frac{1}{2}, \frac{-\sqrt{3}}{2})$
$\frac{\pi}{2}$
$\frac{2\pi}{3}$
$\frac{\pi}{3}$
$\frac{3\pi}{4}$
$\frac{\pi}{4}$
$\frac{5\pi}{6}$
$\frac{\pi}{6}$
π
0
$\frac{7\pi}{6}$
$\frac{11\pi}{6}$
$\frac{5\pi}{4}$
$\frac{7\pi}{4}$
$\frac{4\pi}{3}$
$\frac{5\pi}{3}$
$\frac{3\pi}{2}$
90°
120°
60°
135°
45°
150°
30°
180°
0°
210°
330°
225°
315°
240°
300°
270°

(*) $\cos\theta \Rightarrow$ x-coordinate on a unit circle

$\sin\theta \Rightarrow$ y-coordinate on a unit circle

(*) $\tan\theta = \dfrac{\sin\theta}{\cos\theta}$



$\pi \Rightarrow 180^\circ$

R	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$
D	0°	30°	45°	60°	90°
sin	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
cos	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
tan	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	undefined

1.25

Ex:

① $\sin \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$

② $\cos \frac{3\pi}{2} = 0$

③ $\tan \frac{5\pi}{3} = -\sqrt{3}$

II sine

I all

S^+ | A^+

T^+ | C^+

III tangent

IV cosine

(x, y)

$(\cos\theta, \sin\theta)$