

$$\frac{2\sin x \cos x - \sin x}{\tan x + 1} \leq 0$$

Resolve in  $[0, 2\pi]$

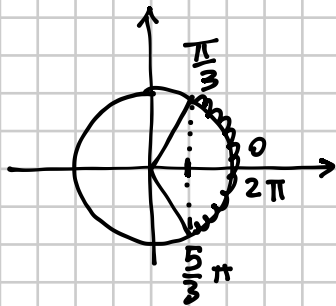
$$[x=0 \vee \frac{\pi}{3} \leq x < \frac{\pi}{2} \vee \frac{3}{4}\pi < x \leq \pi \vee \frac{3}{2}\pi < x \leq \frac{5}{3}\pi \vee \frac{7}{4}\pi < x \leq 2\pi]$$

$$\frac{N_1 \quad N_2}{D} \leq 0$$

$$\frac{\sin x (2\cos x - 1)}{\tan x + 1} \leq 0$$

$N_1$ ]  $\sin x > 0 \quad 0 < x < \pi$  (periodicity - all fine)

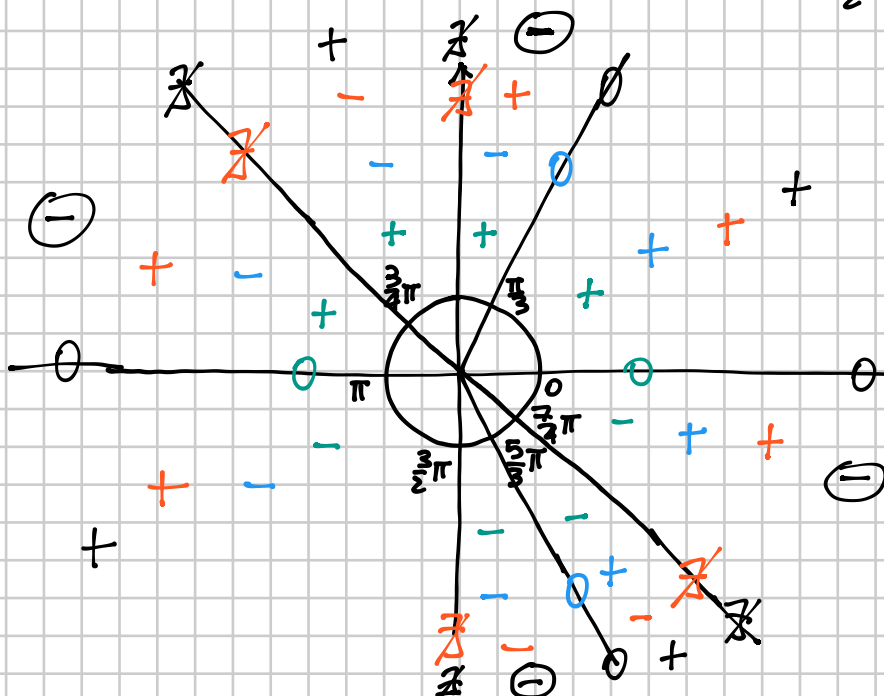
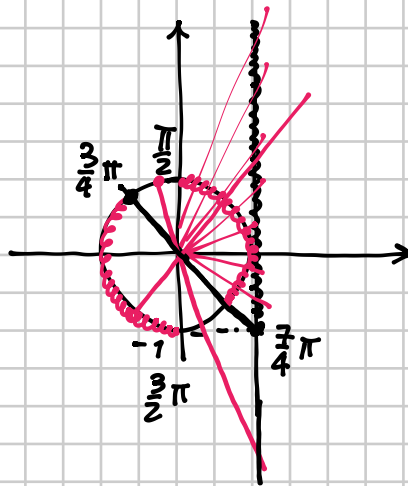
$N_2$ ]  $2\cos x - 1 > 0 \quad \cos x > \frac{1}{2} \quad 0 < x < \frac{\pi}{3} \vee \frac{5}{3}\pi < x < 2\pi$



$D$ ]  $\tan x + 1 > 0 \quad \tan x > -1$

$$0 < x < \frac{\pi}{2} \vee \frac{3}{4}\pi < x < \frac{3}{2}\pi$$

$$\vee \frac{7}{4}\pi < x < 2\pi$$



$$x=0 \vee \frac{\pi}{3} \leq x < \frac{\pi}{2} \vee$$

$$\frac{3}{4}\pi < x \leq \pi \vee$$

$$\frac{3}{2}\pi < x \leq \frac{5}{3}\pi \vee$$

$$\frac{7}{4}\pi < x \leq 2\pi$$