

4.21
4

$$\tan x + \tan 2x - \tan 3x > 0$$

$$\frac{\sin x}{\cos x} - \frac{\sin 3x}{\cos 3x} + \frac{\sin 2x}{\cos 2x} > 0$$

$$\frac{\sin x \cos 3x - \cos x \sin 3x}{\cos x \cos 3x} + \frac{\sin 2x}{\cos 2x} > 0$$

$$\frac{\sin(x-3x)}{\cos x \cos 3x} + \frac{\sin 2x}{\cos 2x} > 0$$

: נציב את $3x, 2x, x \neq \frac{\pi}{2} + \pi k$
 $x \neq \frac{\pi}{2}, \frac{\pi}{4}, \frac{\pi}{6}$ פירוק
: $\frac{\pi}{6}$

$$\sin 2x \left(-\frac{1}{\cos x \cos 3x} + \frac{1}{\cos 2x} \right) > 0$$

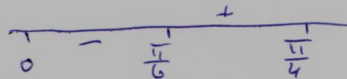
\downarrow
 $2x = \pi k$
 $x = \frac{\pi k}{2}$

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 $\cos 2x = \cos x \cos 3x = \frac{1}{2} \cos 4x + \frac{1}{2} \cos 2x$

$$\frac{1}{2} \cos 2x = \frac{1}{2} \cos 4x$$

$$2x = 4x + 2\pi k \quad 2x = -4x + 2\pi k$$

$$x = +\pi k \quad x = \frac{\pi k}{3}$$



$0 < x < \frac{\pi}{4}$ פירוק