

# CHEAT SHEET

## Trigonometry

FB formula booklet

### Key Formulae

#### Reciprocal Functions

- $\sec \theta \equiv \frac{1}{\cos \theta}$
- $\operatorname{cosec} \theta \equiv \frac{1}{\sin \theta}$
- $\cot \theta \equiv \frac{1}{\tan \theta}$

#### Core Identities

- $\tan \theta \equiv \frac{\sin \theta}{\cos \theta}$
- $\cos^2 \theta + \sin^2 \theta \equiv 1$
- $1 + \tan^2 \theta \equiv \sec^2 \theta$
- $1 + \cot^2 \theta \equiv \operatorname{cosec}^2 \theta$

#### Double Angle Formulae

- $\sin 2\theta \equiv 2 \sin \theta \cos \theta$
- $\cos 2\theta \equiv \cos^2 \theta - \sin^2 \theta$  OR  
 $\cos 2\theta \equiv 2 \cos^2 \theta - 1$  OR  
 $\cos 2\theta \equiv 1 - 2 \sin^2 \theta$
- $\tan 2\theta \equiv \frac{2 \tan \theta}{1 - \tan^2 \theta}$

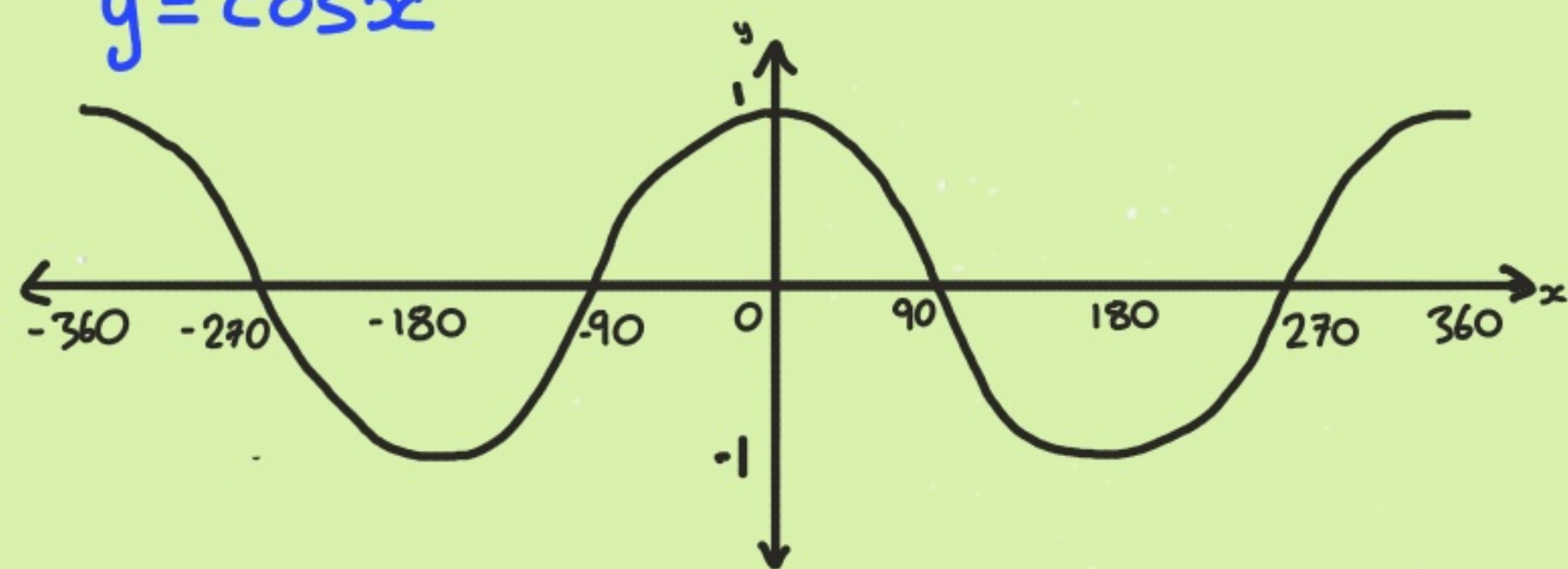
#### Addition Formulae

- $\sin(A \pm B) \equiv \sin A \cos B \pm \cos A \sin B$  FB
- $\cos(A \pm B) \equiv \cos A \cos B \mp \sin A \sin B$  FB
- $\tan(A \pm B) \equiv \frac{\tan A \pm \tan B}{1 \mp \tan A \tan B}$  FB

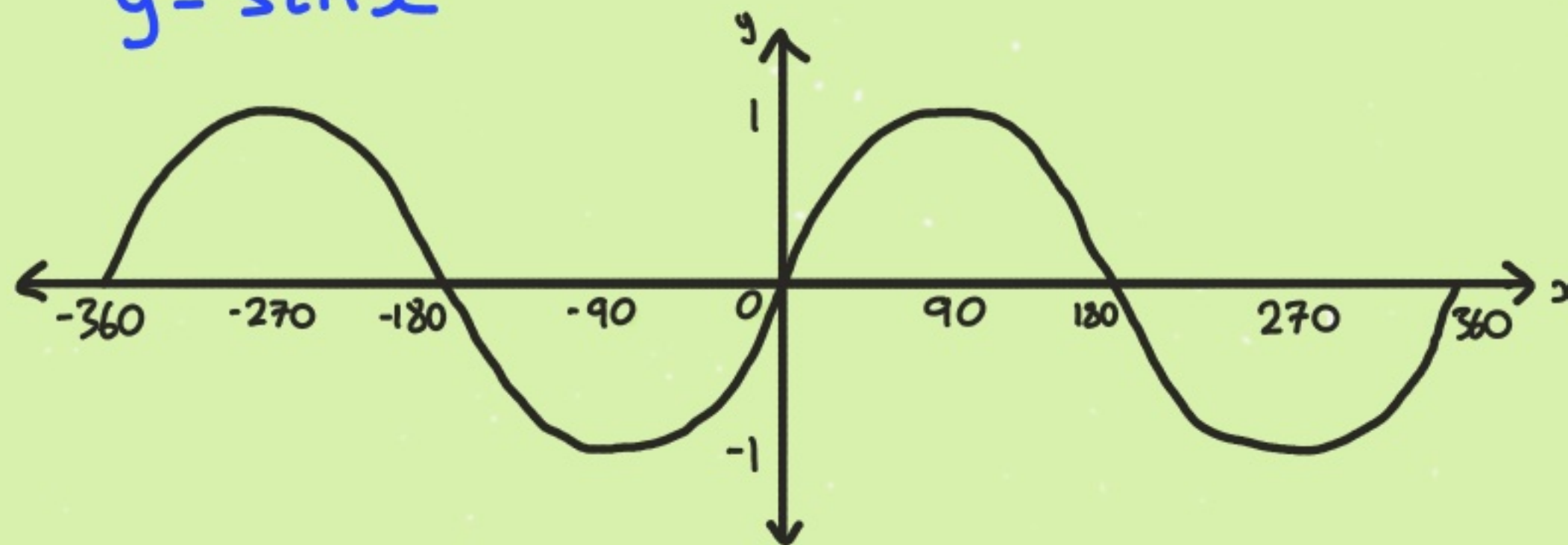
### Key Graphs

#### Normal Trig Functions

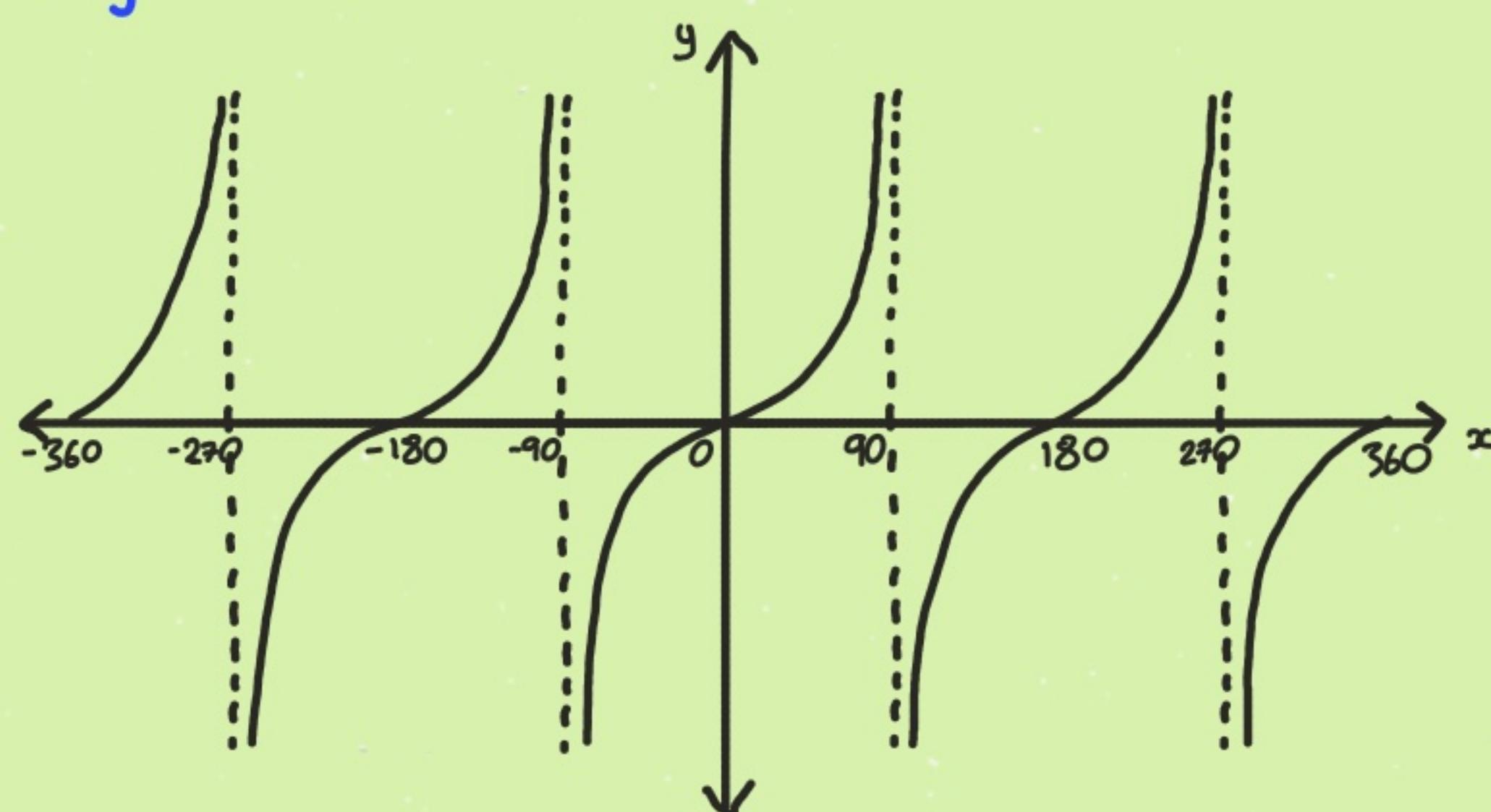
$y = \cos x$



$y = \sin x$



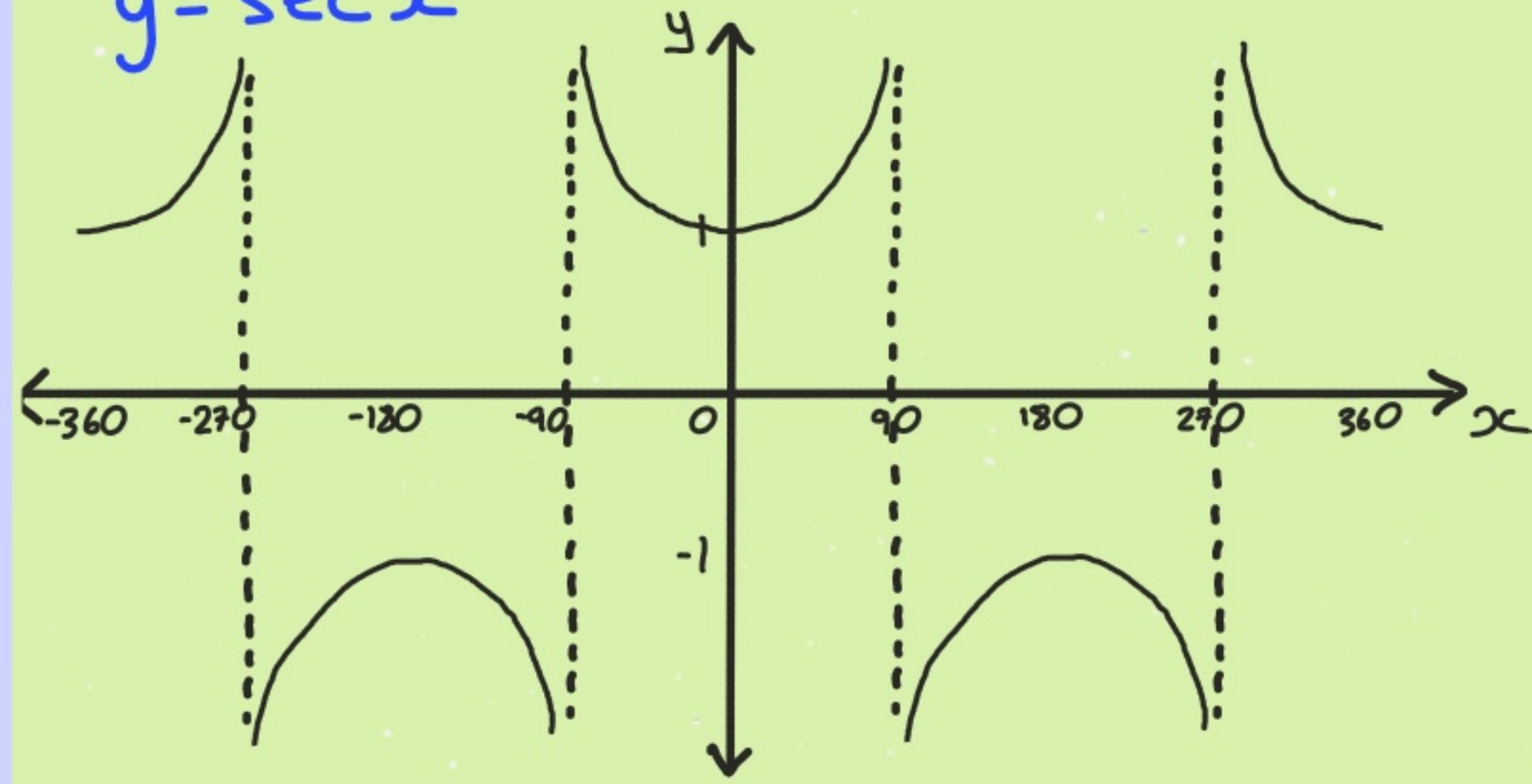
$y = \tan x$



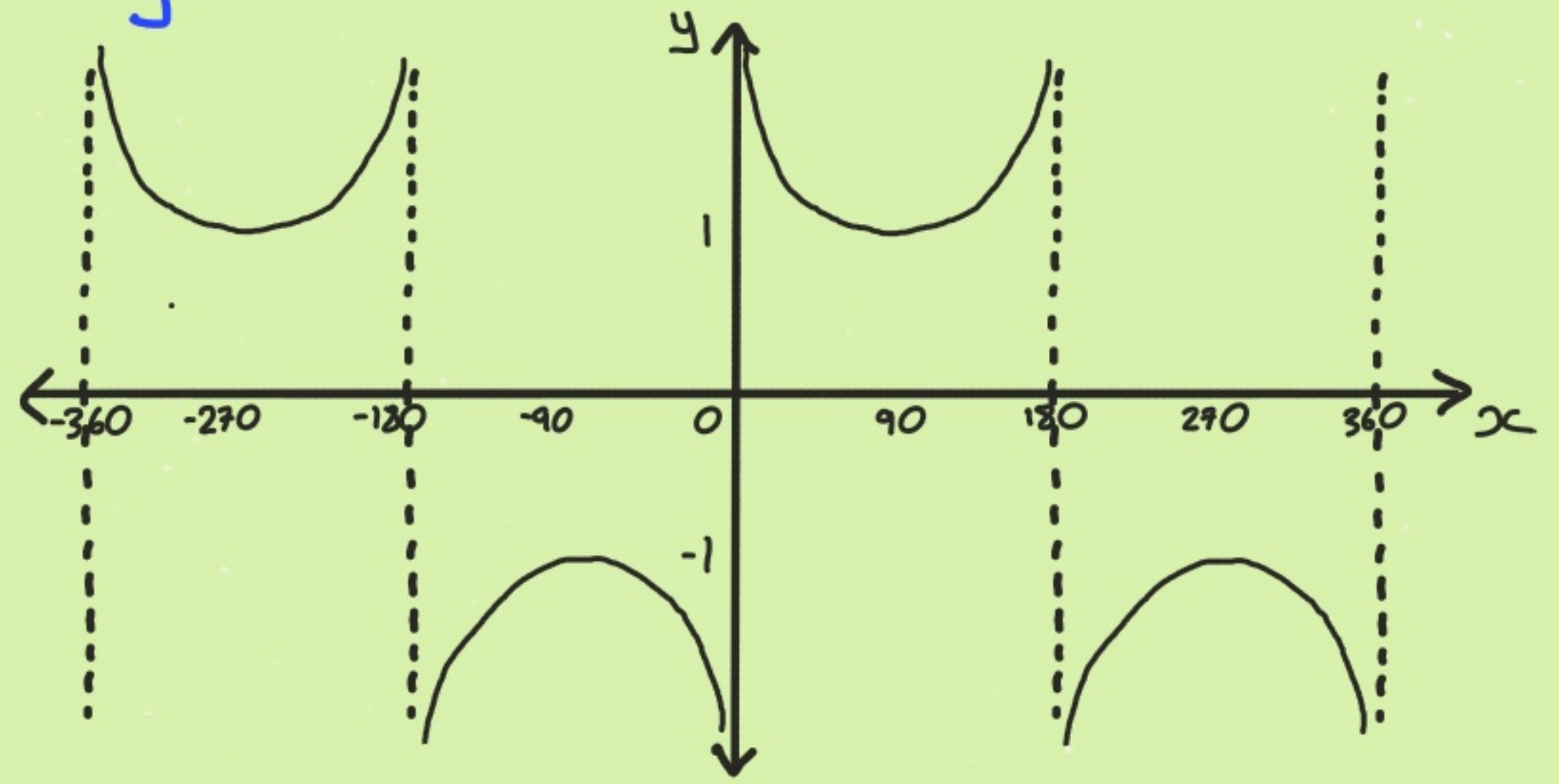


## Reciprocal Trig Functions

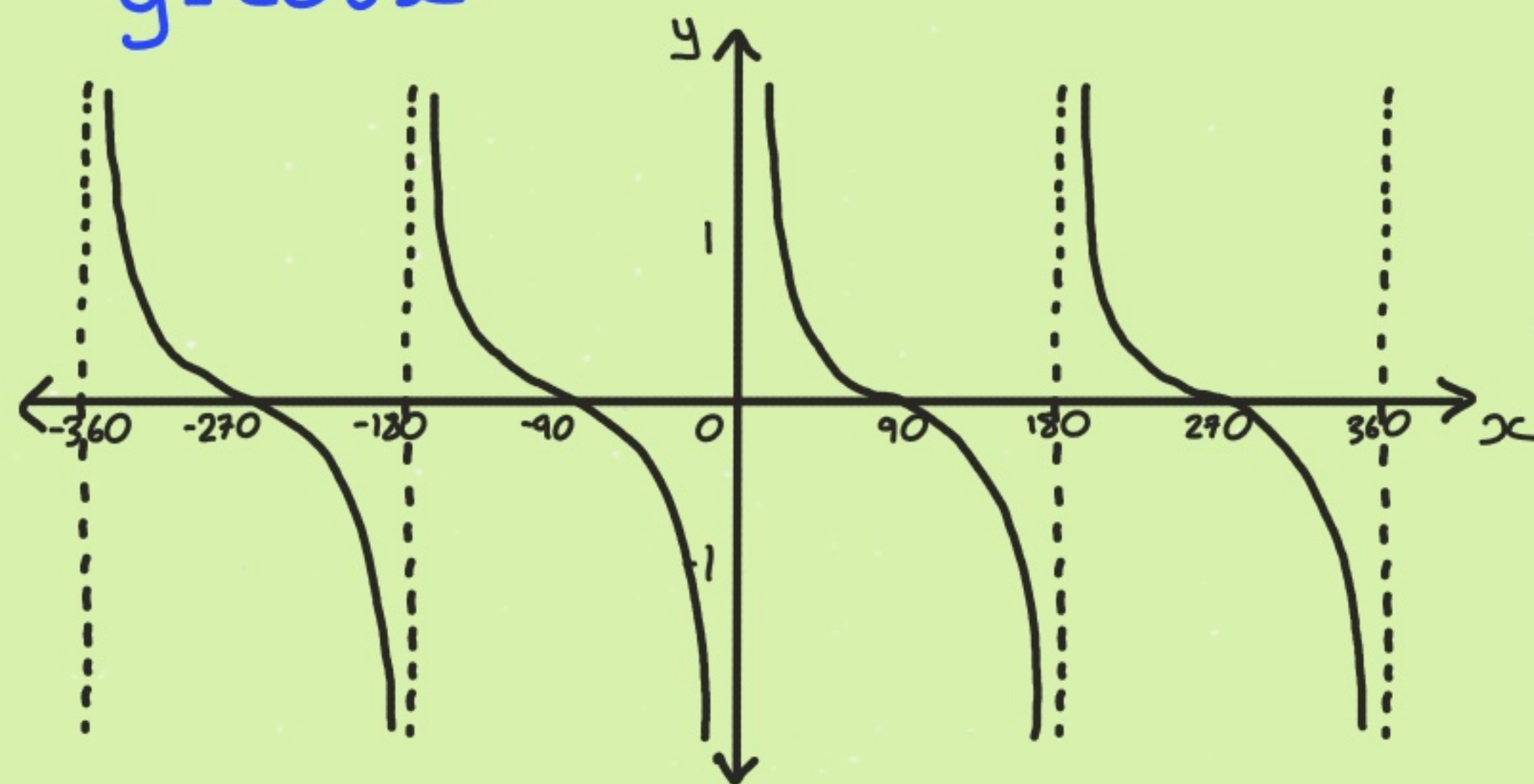
$y = \sec x$



$y = \operatorname{cosec} x$

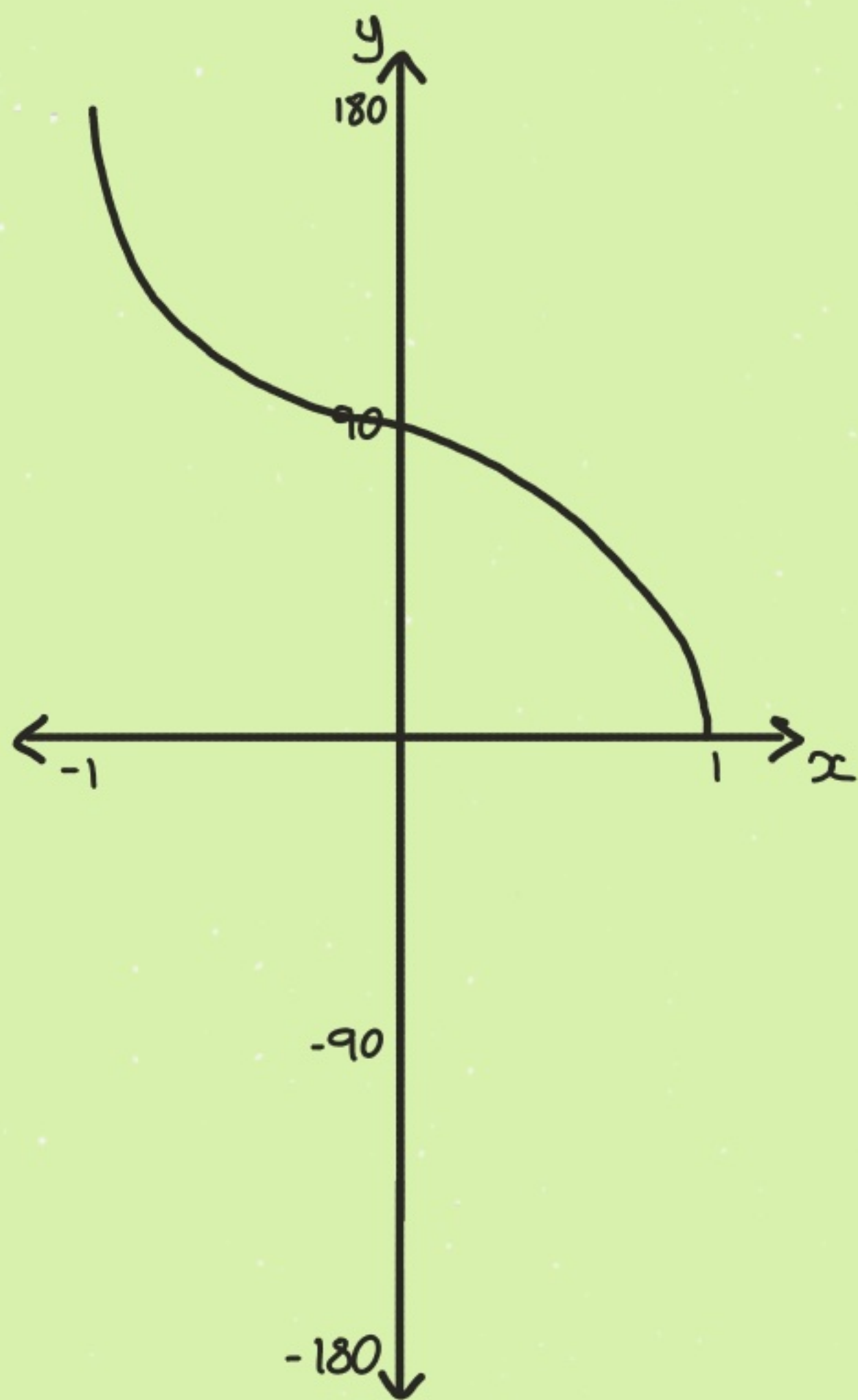


$y = \cot x$

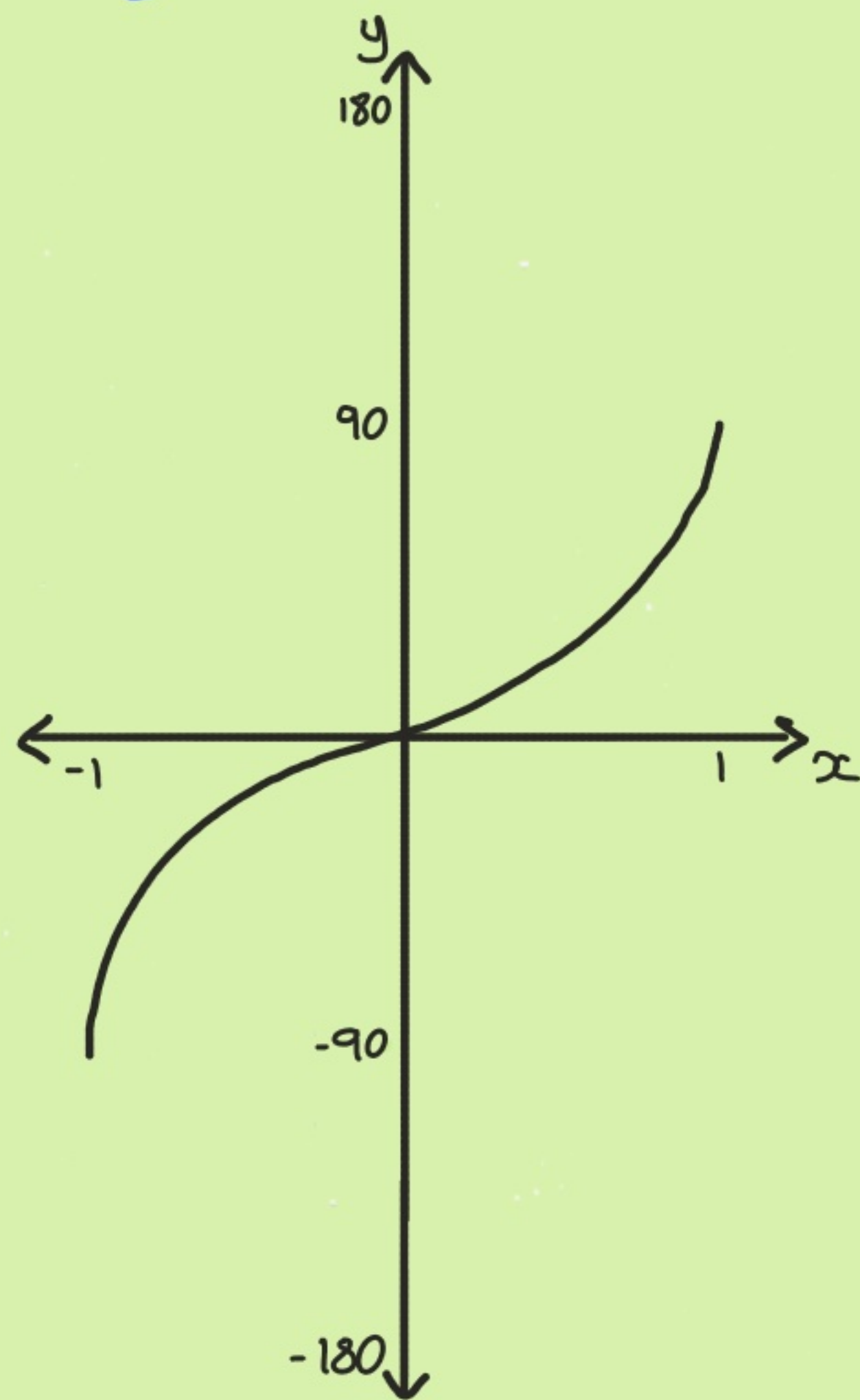


## Inverse Trig Functions

$y = \arccos x$



$y = \arcsin x$



$y = \arctan x$

