

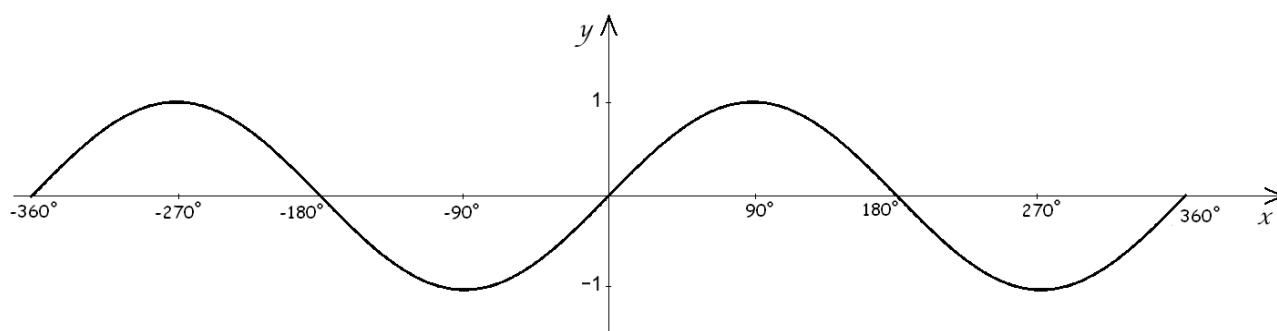
$$f(\alpha) = \sin \alpha$$

domain: all angles

range: $[-1, 1]$

periodic with period 360° : for all α , $\sin(\alpha + k \cdot 360^\circ) = \sin \alpha$ where $k \in \mathbb{Z}$

odd function: for all α , $\sin(-\alpha) = -\sin \alpha$



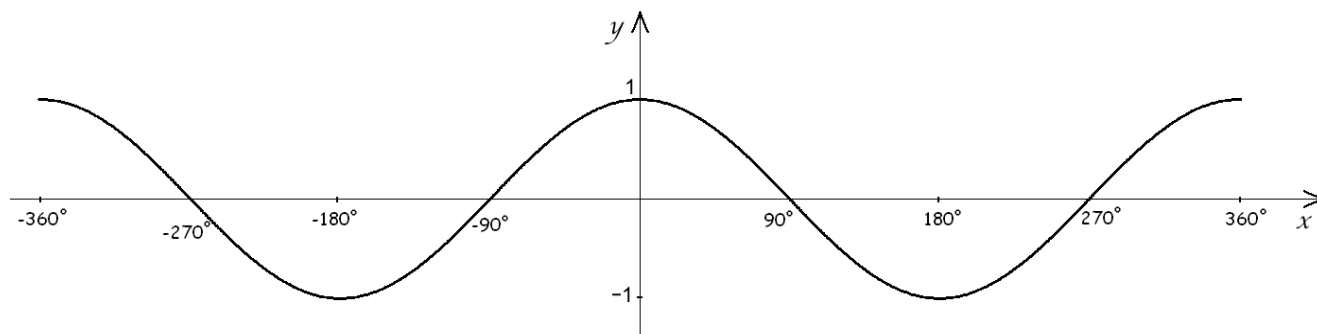
$$f(\alpha) = \cos \alpha$$

domain: all angles

range: $[-1, 1]$

periodic with period 360° : for all α , $\cos(\alpha + k \cdot 360^\circ) = \cos \alpha$ where $k \in \mathbb{Z}$

even function: for all α , $\cos(-\alpha) = \cos \alpha$



$$f(\alpha) = \tan \alpha = \frac{\sin \alpha}{\cos \alpha}$$

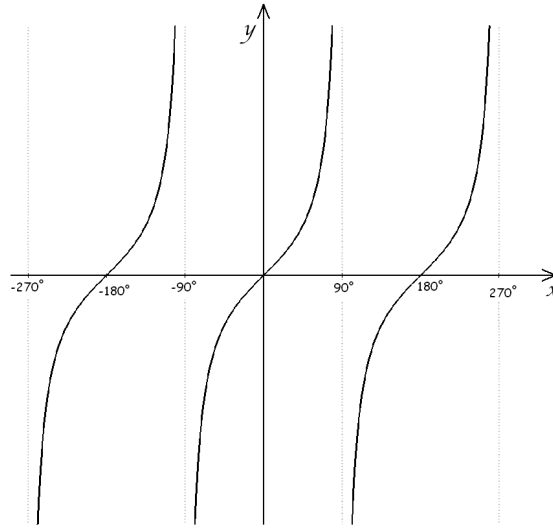
domain: $\alpha \neq 90^\circ + k \cdot 180^\circ$ where $k \in \mathbb{Z}$

range: $\mathbb{R}$

periodic with period 180° : for all α , $\tan(\alpha + k \cdot 180^\circ) = \tan \alpha$

vertical asymptotes at $x = 90^\circ + k \cdot 180^\circ$ where $k \in \mathbb{Z}$

odd function: for all α , $\tan(-\alpha) = -\tan \alpha$



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