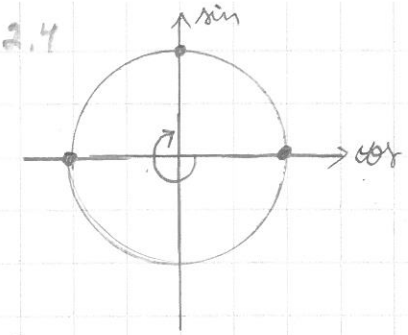
2.4



$\cos 0 = 1$

$\sin(-3\pi) = 0$

$\cos\left(-\frac{3\pi}{2}\right) = \cos\left(-3 \cdot \frac{\pi}{2}\right) = 0$

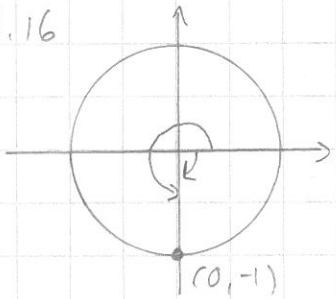
π (rad) $= 180°$ $|:2$

$\frac{\pi}{2}$ (rad) $= 90°$

2.11 a) $\cos\left(5 \underbrace{\cos\frac{\pi}{5}}_{0,809\ldots}\right) \approx \cos(5 \cdot 0,809\ldots) \approx -0,61887\ldots \approx \underline{-0,619}$

b) $\sin\left(2 \underbrace{\cos 43°}_{0,731354} - \pi\right) \approx -0,994164 \approx -0,994$

2.16



$\alpha = -90°$ $\left(-\frac{\pi}{2}\right)$

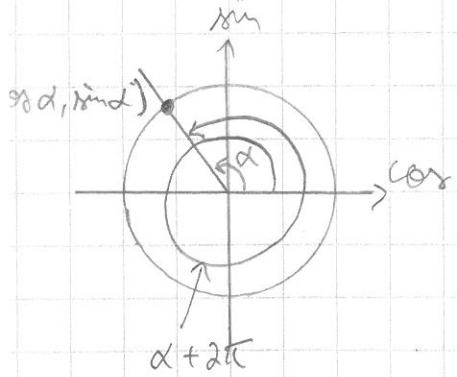
tai $\alpha = 270°$ $\left(3 \cdot \frac{\pi}{2} = \frac{3\pi}{2}\right)$

tai $\alpha = -360° - 90° = -450°$ $\left(-5 \cdot \frac{\pi}{2} = -\frac{5\pi}{2}\right)$

tai $\alpha = 360° + 270° = 630°$ $\left(7 \cdot \frac{\pi}{2} = \frac{7\pi}{2}\right)$

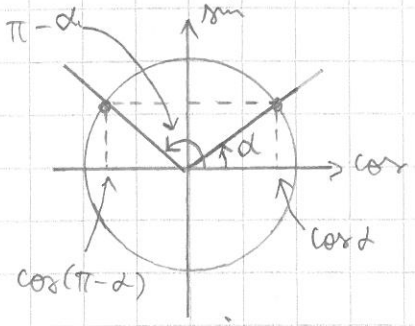
tai ⋮

3. Sinin ja kosinin ominaisuuksia



$$\sin(\alpha + 2\pi) = \sin\alpha$$
$$\cos(\alpha + 2\pi) = \cos\alpha$$

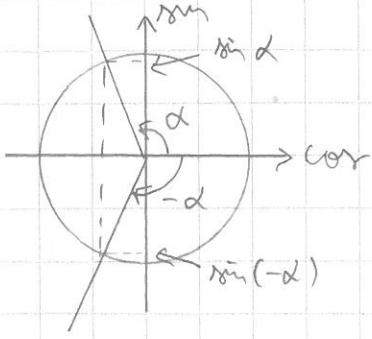
Sini ja kosini ovat $\underline{2\pi\text{-jaksollisia funktioita}}$.



$$\sin(\pi - \alpha) = \sin\alpha$$
$$\cos(\pi - \alpha) = -\cos\alpha$$

SININ SYMMETRIALAUSE

KOSININ ANTISYMMETRIALAUSE



$$\sin(-\alpha) = -\sin\alpha$$
$$\cos(-\alpha) = \cos\alpha$$

SINI ON PARITON FUNKTIO

KOSINI ON PARILLINEN FUNKTIO