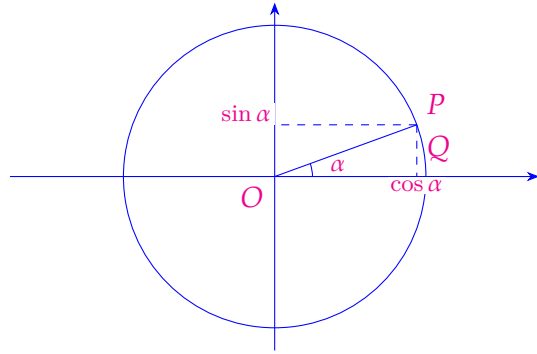
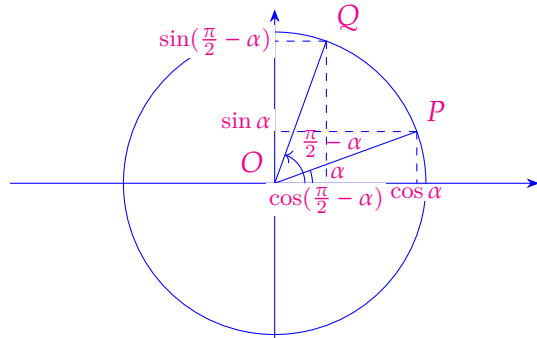


ចំពោះចំនួនគតិវិជ្ជា k គេបាន

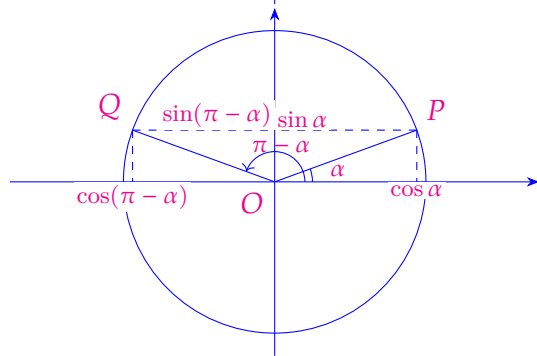
- (1) $\sin(k2\pi + \alpha) = \sin \alpha$
- (2) $\cos(k2\pi + \alpha) = \cos \alpha$
- (3) $\tan(k2\pi + \alpha) = \tan \alpha$
- (4) $\cot(k2\pi + \alpha) = \cot \alpha$



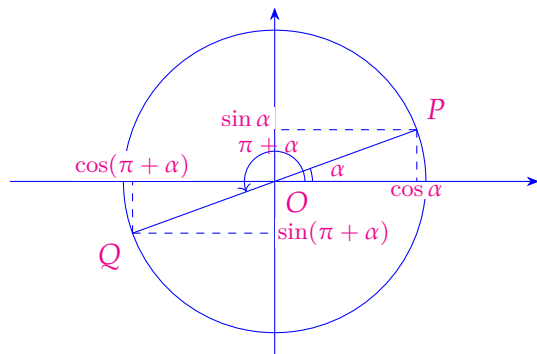
- (5) $\sin(\frac{\pi}{2} - \alpha) = \cos \alpha$
- (6) $\cos(\frac{\pi}{2} - \alpha) = \sin \alpha$
- (7) $\tan(\frac{\pi}{2} - \alpha) = \cot \alpha$
- (8) $\cot(\frac{\pi}{2} - \alpha) = \tan \alpha$



- (9) $\sin(\pi - \alpha) = \sin \alpha$
- (10) $\cos(\pi - \alpha) = -\cos \alpha$
- (11) $\tan(\pi - \alpha) = -\tan \alpha$
- (12) $\cot(\pi - \alpha) = -\cot \alpha$

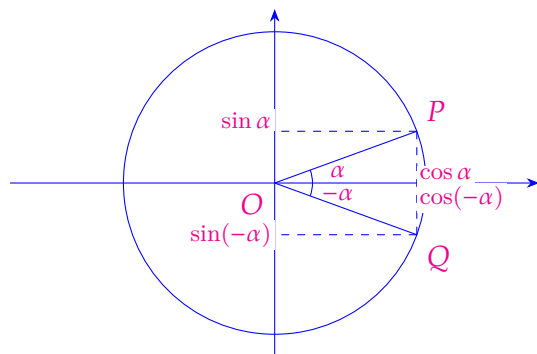


- (13) $\sin(\pi + \alpha) = -\sin \alpha$
- (14) $\cos(\pi + \alpha) = -\cos \alpha$
- (15) $\tan(\pi + \alpha) = \tan \alpha$
- (16) $\cot(\pi + \alpha) = \cot \alpha$



ក្នុងករណីនេះគេបាន

- (17) $\tan(k\pi + \alpha) = \tan \alpha$
- (18) $\cot(k\pi + \alpha) = \cot \alpha$



- (19) $\sin(-\alpha) = -\sin \alpha$
- (20) $\cos(-\alpha) = \cos \alpha$
- (21) $\tan(-\alpha) = -\tan \alpha$
- (22) $\cot(-\alpha) = -\cot \alpha$

$$\begin{aligned}
 (23) \quad \cos^2 \alpha + \sin^2 \alpha &= 1 \\
 (24) \quad \cos(\alpha - \beta) &= \cos \alpha \cos \beta + \sin \alpha \sin \beta \\
 (25) \quad \cos(\alpha + \beta) &= \cos \alpha \cos \beta - \sin \alpha \sin \beta \\
 (26) \quad \sin(\alpha + \beta) &= \sin \alpha \cos \beta + \cos \alpha \sin \beta \\
 (27) \quad \sin(\alpha - \beta) &= \sin \alpha \cos \beta - \cos \alpha \sin \beta
 \end{aligned}$$

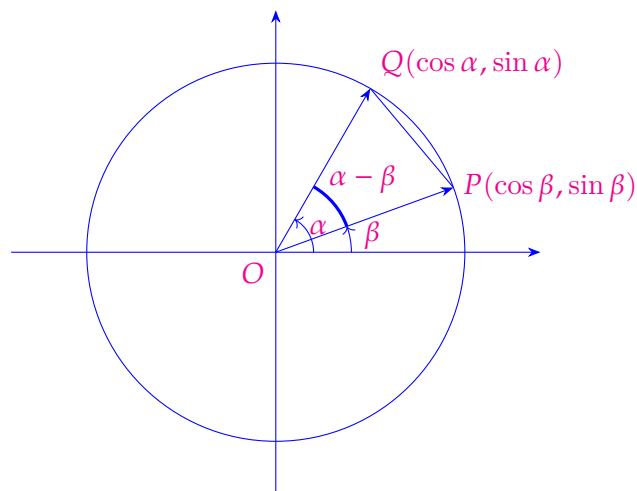
$$\begin{aligned}
 (28) \quad \cos 2\alpha &= \cos^2 \alpha - \sin^2 \alpha \\
 (29) \quad \cos 2\alpha &= 2 \cos^2 \alpha - 1 \\
 (30) \quad \cos 2\alpha &= 1 - 2 \sin^2 \alpha \\
 (31) \quad \sin 2\alpha &= 2 \sin \alpha \cos \alpha
 \end{aligned}$$

$$\begin{aligned}
 (32) \quad 1 - \cos \alpha &= 2 \sin^2 \frac{\alpha}{2} \\
 (33) \quad 1 + \cos \alpha &= 2 \cos^2 \frac{\alpha}{2}
 \end{aligned}$$

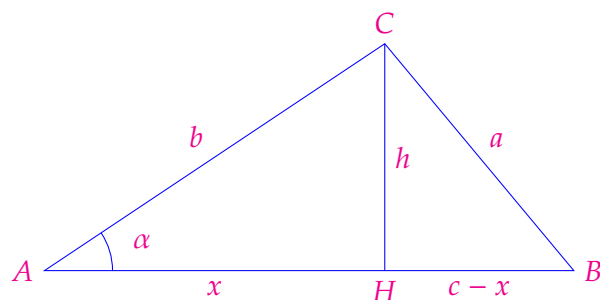
$$\begin{aligned}
 (34) \quad \cos \alpha \cos \beta &= \frac{1}{2}(\cos(\alpha - \beta) + \cos(\alpha + \beta)) \\
 (35) \quad \sin \alpha \sin \beta &= \frac{1}{2}(\cos(\alpha - \beta) - \cos(\alpha + \beta)) \\
 (36) \quad \sin \alpha \cos \beta &= \frac{1}{2}(\sin(\alpha + \beta) + \sin(\alpha - \beta)) \\
 (37) \quad \cos \alpha \sin \beta &= \frac{1}{2}(\sin(\alpha + \beta) - \sin(\alpha - \beta))
 \end{aligned}$$

$$\begin{aligned}
 (38) \quad \cos \alpha + \cos \beta &= 2 \sin\left(\frac{\alpha + \beta}{2}\right) \sin\left(\frac{\alpha - \beta}{2}\right) \\
 (39) \quad \cos \alpha - \cos \beta &= -2 \cos\left(\frac{\alpha + \beta}{2}\right) \cos\left(\frac{\alpha - \beta}{2}\right)
 \end{aligned}$$

ព្យាយាមចេញរករូបមន្តនាយឌ្រនិងសម្រាប់ \tan និង \cot ។



$$\begin{aligned}
 \vec{OP} \cdot \vec{OQ} &= OP \cdot OQ \cdot \cos(\alpha - \beta) \\
 \cos \beta \cos \alpha + \sin \beta \sin \alpha &= 1 \cdot 1 \cdot \cos(\alpha - \beta) \\
 \cos \alpha \cos \beta + \sin \alpha \sin \beta &= \cos(\alpha - \beta)
 \end{aligned}$$



$$\begin{aligned}
 x^2 + h^2 &= b^2 \\
 (c - x)^2 + h^2 &= a^2 \\
 x &= \frac{-a^2 + b^2 + c^2}{2c} \\
 \cos \alpha = \frac{x}{b} &= \frac{-a^2 + b^2 + c^2}{2bc}
 \end{aligned}$$