Peruskaava

$$\sin^2\alpha + \cos^2\alpha = 1$$

$\sin^2\alpha = (\sin\alpha)^2 = \sin\alpha \cdot \sin\alpha$

Ex1 Määritä lausekkeen $\cos\alpha$ tarkka arvo, kun $\sin\alpha = -\frac{1}{5}$ ja $\pi < \alpha < \frac{3\pi}{2}$.

Ratk. $\sin^2\alpha + \cos^2\alpha = 1$

I tapa

$$\cos^2\alpha = 1 - \sin^2\alpha \quad | \sqrt{\ }$$

$$\cos\alpha = \pm\sqrt{1-\sin^2\alpha}$$

$$\cos\alpha = \pm\sqrt{1-\left(-\tfrac{1}{5}\right)^2}$$

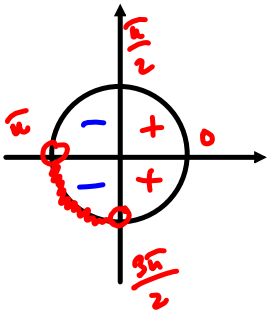
$$= \pm\sqrt{1-\frac{1}{25}}$$

$$= \pm\sqrt{\frac{25}{25}-\frac{1}{25}}$$

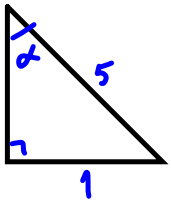
$$= \pm\sqrt{\frac{24}{25}}$$

$$= \pm\frac{\sqrt{24}}{5}$$

$$\cos\alpha = -\frac{\sqrt{24}}{5}$$



II tapa



$$\sin\alpha = -\frac{1}{5}$$