K8. Käytä hyväksi tietoa, että $\cos\frac{\pi}{6} = \frac{\sqrt{3}}{2}$, ja laske ilman laskinta

a) $\cos(-\frac{\pi}{6})$

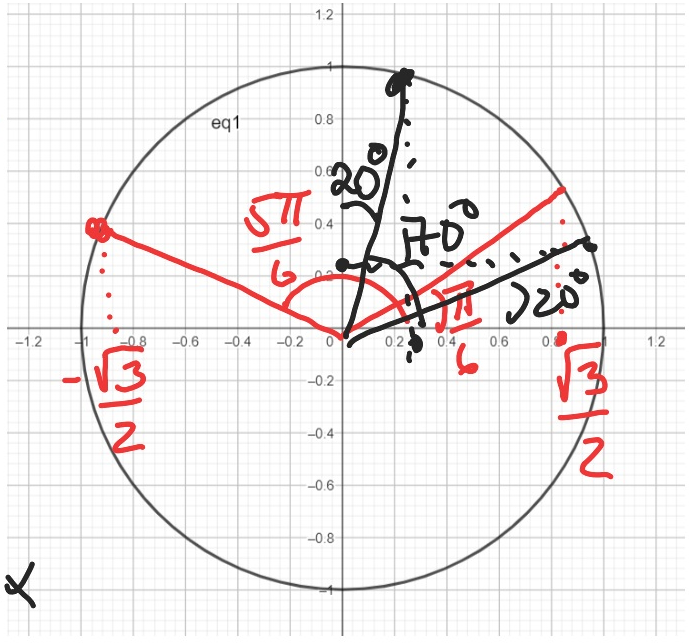
b) $\cos\frac{5\pi}{6}$ $= \cos 150°$ $\frac{\pi}{6} = 30°$

c) $\cos\frac{19\pi}{6}$.

K9. Laske ilman laskinta.

a) $\frac{\sin 20°}{\cos 70°} = \frac{\sin 20°}{\sin 20°} = 1$

b) $\frac{\cos\frac{\pi}{5}}{\sin\frac{13\pi}{10}}$ $\cos(90° - x) = \sin x$



K12. Määritä lausekkeen

CAS **a)** $\cos 2\alpha$

b) $\sin 2\alpha$

tarkka arvo, kun $\cos\alpha = \frac{4}{5}$.

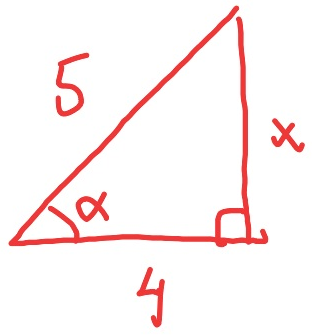
Kaksinkertaiset kulmat

$\sin 2x = 2\sin x \cos x$

$\cos 2x = \cos^2 x - \sin^2 x = 2\cos^2 x - 1 = 1 - 2\sin^2 x$

b) $\sin 2\alpha = 2\sin\alpha\cos\alpha$

$= 2 \cdot \frac{3}{5} \cdot \frac{4}{5} = \frac{24}{25}$



$4^2 + x^2 = 5^2$

$x = \sqrt{25-16} = 3$

$\Rightarrow \sin\alpha = \frac{3}{5}$