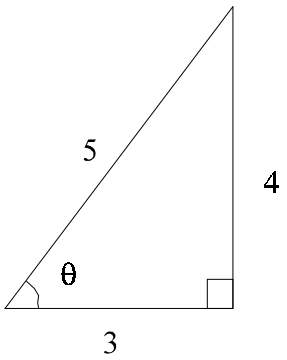
Opg 2.6

Vis: $(\cos\theta + j\sin\theta)^n = \cos n\theta + j\sin n\theta$

$$(\cos\theta + j\sin\theta)^n = (e^{j\theta})^n = e^{jn\theta} = \cos n\theta + j\sin n\theta$$

q.e.d.



3-4-5-trekant

$\sin\theta = 4/5$ og $\cos\theta = 3/5$

$\theta = 0.9273$ [rad] $= 53.13°$

$$(\frac{3}{5} + j\frac{4}{5})^{100} = (\cos 0.9273 + j\sin 0.9273)^{100} = \cos 92.73 + j\sin 92.73$$

$$= \underline{0.053 - j0.999} = \underline{e^{-j1.518}}$$

$$\frac{92.72952}{2\pi} = 14$$

$$92.72952 - 15\cdot 2\pi = -1.51826 = -86.99^\circ$$