Opt1096

den 4 mars 2013
10:59

$$(\cos u + i\sin u)^2 = \cos 2u + i\sin 2u$$ "de Moivre"

$$= \cos^2 u + 2i\sin u\cos u + i^2\sin^2 u$$

$$= \cos^2 u - \sin^2 u + 2i\sin u\cos u$$

"Kvadreringsregel"

Alltså:

$$\cos 2u + i\sin 2u = \cos^2 u - \sin^2 u + 2i\sin u\cos u$$

Identifiera real- och imaginärdelar:

$$\cos 2u = \cos^2 u - \sin^2 u$$

$$\sin 2u = 2\sin u\cos u.$$