

förång med konjugat

$$\frac{z_1}{z_2} = \frac{r_1 (\cos u + i \sin u)}{r_2 (\cos v + i \sin v)} \stackrel{\downarrow}{=} \frac{r_1 (\cos u + i \sin u) (\cos v - i \sin v)}{r_2 (\cos v + i \sin v) (\cos v - i \sin v)}$$

$$= \frac{r_1 (\overbrace{\cos u \cos v + \sin u \sin v}^{\cos(u-v)} + i (\overbrace{\sin u \cos v - \sin v \cos u}^{\sin(u-v)})}{r_2 (\underbrace{\cos^2 v + \sin^2 v}_{=1: \text{ (trig. ettan)}})}$$

$$= \frac{r_1 (\cos(u-v) + i \sin(u-v))}{r_2} =$$

$$= \frac{r_1}{r_2} (\cos(u-v) + i \sin(u-v))$$