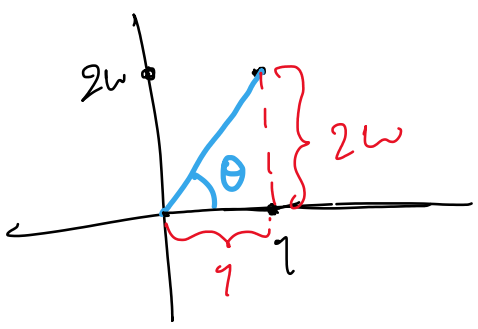
6.26

måndag 19 december 2022 13:08

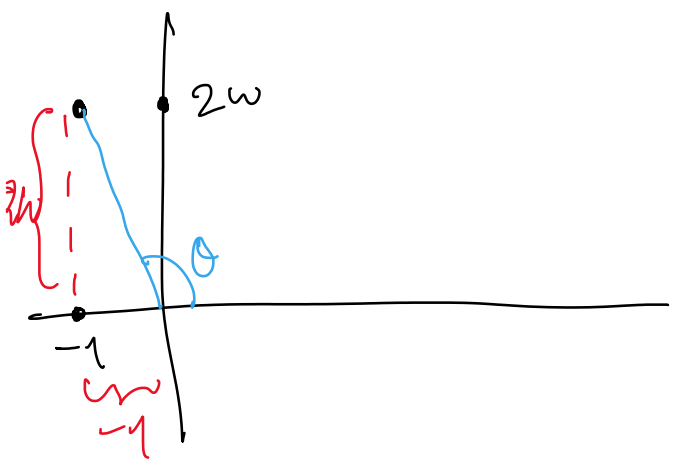
a) $1 + 2iw = z$



$\tan\theta = \frac{2w}{1}$ $\quad \arctan(2w) = \theta$

$\arg z = \arg(1 + 2iw) = \arctan(2w)$

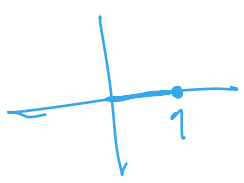
b) $-1 + 2iw = z$



$\tan\theta = -\frac{2w}{1}$

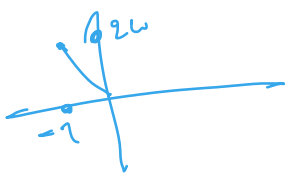
$\pi - \arctan(2w) = \theta$

c) $\arg\left(1/(1+2iw)\right) = \arg 1 - \arg(1+2iw) = \arg 1 - \arctan(2w)$

$\arg 1 = 0$ 

Sv: $-\arctan(2w)$

d) $\arg\left(1/(-1+2iw)\right) = \arg 1 - \arg(-1+2iw) = -\pi + \arctan(2w)$

$\arg(-1+2iw) =$ 

$= \pi - \arctan(2w)$

e) $\arg\left(1/(1+2iw)^2\right) = \arg 1 - \arg(1+2iw)^2 = -2\arctan(2w)$

f) $\arg\left(e^{iw}/(1+2iw)^2\right) = \arg e^{iw} - \arg(1+2iw)^2 = w - 2\arctan(2w)$

$\arg e^{iw} = w$