

Kirill,

It just occurred to me that (10) can be substantially simplified. Let  $f(w) = \zeta(w)$ ,  $w(z) = -iz/\sqrt{3} + \eta$ . Then (10) says

$$r(z) = -(f^{-1})'(w),$$

in view of the differentiation rule of the inverse function (recall that  $f' = -\wp$ ).

So we are interested in the derivative of the power series of the inverse branch  $\zeta^{-1}$  which takes  $\eta$  to  $\omega$ .

Alex.