9h)

z 93a $\prod_{n=1}^{\infty} \frac{z^2+n^2}{n^2} = \frac{\sin(\pi z i)}{\pi z i} = \prod_{n=1}^{\infty}\left(1+\frac{z^2}{n^2}\right)$, $z \in \mathbb{C}$

jeśli $f_n \in H(\Omega)$, $\sum |f_n(z)|$ – zb. wj. na $\Omega \Rightarrow$ $P(z) = \prod_{n=1}^{\infty}(1+f_n(z))$ zb wj.

$$\frac{P'(z)}{P(z)} = \sum_{n=1}^{\infty} \frac{(1+f_n(z))'}{1+f_n(z)},$$

$z \in \Omega \setminus P^{-1}(\{0\})$

$\sum \left|\frac{z^2}{n^2}\right|$ – zb. wj. na $\mathbb{C}$

$$\frac{\left(\frac{\sin(\pi z i)}{\pi z i}\right)'}{\frac{\sin(\pi z i)}{\pi z i}} = \sum_{n=1}^{\infty} \frac{\left(\frac{z^2+n^2}{n^2}\right)'}{\frac{z^2+n^2}{n^2}} = \sum_{n=1}^{\infty} \frac{\frac{2z}{n^2}}{\frac{z^2+n^2}{n^2}} = 2z \sum_{n=1}^{\infty} \frac{1}{z^2+n^2}$$

$\pi z i \neq k\pi \quad k \in \mathbb{Z}$

$z i \neq k$

$z \neq \frac{k}{i} \equiv -ki$ $\quad z \notin i\mathbb{Z}$