

1. Razvijte u Laurentov red oko točke z_0 funkciju $f(z) = \frac{1}{z^2 - 1}$ u području D :

(a) $z_0 = 1, \quad D = \{z \in \mathbb{C} : 0 < |z - 1| < 2\}$

(b) $z_0 = 2, \quad D = \{z \in \mathbb{C} : 1 < |z - 2| < 3\}$

(c) $z_0 = 1 + i, \quad 0 \in D.$

2. Razvijte u Laurentov red oko točke z_0 funkciju f u zadanom području D :

(a) $f(z) = \frac{1}{z(z-1)(z-2)}, \quad z_0 = 0, \quad \frac{-3}{2} \in D$

(b) $f(z) = \frac{1}{(z^2-1)(z^2+4)}, \quad z_0 = 0, \quad 3 \in D.$

3. Razvijte u Laurentov red oko točke $z_0 = 1$ funkciju $f(z) = z \cos \frac{\pi z + 1 - \pi}{z - 1}$.