

Nalezněte rezidua ve všech singularitách dané funkce.

- |     |  |     |                                   |
|-----|--|-----|-----------------------------------|
| 1.  | $f(z) = \frac{1}{z^3 + z}$                         | 11. | $\tanh z$                         |
| 2.  | $\frac{z^2}{z^4 + 1}$                              | 12. | $\frac{\cos z}{(z - 1)^2}$        |
| 3.  | $\frac{z^2}{(z + 1)^3}$                            | 13. | $\frac{1}{e^z + 1}$               |
| 4.  | $\frac{1}{(z^2 + 1)^3}$                            | 14. | $\frac{\sin \pi z}{(z - 1)^3}$    |
| 5.  | $\frac{1}{(z^2 + 1)(z - 1)^2}$                     | 15. | $\frac{1}{\sin z^2}$              |
| 6.  | $\frac{z^{2n}}{(z - 1)^n}, \quad n \in \mathbb{N}$ | 16. | $\frac{1}{z^6(z - 2)}$            |
| 7.  | $\frac{1}{\sin \pi z}$                             | 17. | $\frac{z^8 + 1}{z^6(z + 2)}$      |
| 8.  | $\cotg \pi z$                                      | 18. | $\frac{z^{10} + 1}{z^6(z^2 + 4)}$ |
| 9.  | $\frac{1}{\sinh z}$                                | 19. | $\frac{\cos z}{(z^2 + 1)^2}$      |
| 10. | $\frac{1}{\cosh z}$                                | 20. | $\frac{\sin z}{(z^2 + 1)^2}$      |