

Equazioni a variabile complessa

Risolvere le seguenti equazioni in $\mathbb{C}$:

1. $(z^5 - 2i + 1)((2i + 1)z^2 - 3z + i) = 0$;
2. $z^5 + (3 + i\sqrt{3})z = 0$;
3. $(z^2 + 3)^2 - 2z^2 - 5 = 0$;
4. $z^6 - z^3 - 2 = 0$;
5. $(z + 2i)^2 = 9i(2 + 3i)^2$;
6. $z^4 - (1 + i)z^2 + i = 0$;
7. $(z^2 + 1)^2 + (z^2 + 1) + 1 = 0$;
8. $(z^2 - \sqrt{3}z + 1)(z^6 - (i - 3)z^3 + 2i) = 0$;
9. $(z^8 + 2 - 5i)(2iz^2 + (2 - 5i)z - 5) = 0$;
10. $(z^4 + 2iz^2 + 3)(z^5 - 15 + 8i) = 0$;
11. $-iz^2 + 3(i - 2)z = 5$;
12. $(z + i)^2 = (\sqrt{3} + i)^3$;
13. $z^5(1 + i)^2 = i(1 - i)$;
14. $z^3(1 - 2i)^3 = (1 + 2i)^2$;
15. $(z^2 + i\sqrt{5}z + 6)(z^5 + 1 + i) = 0$;
16. $(2z^4 - \sqrt{3} + i)(\sqrt{2}z^3 - 1 + i) = 0$;
17. $(z^4(2 + i)^2 - i)(z^3(1 + i) - (4i)^8) = 0$;
18. $z^4 - (1 - i)^8 = 0$;
19. $(z^3 + 2 - 6a)(z^2 + 2z + 6a) = 0, \quad a \in \mathbb{R}$;
20. $(z^3 - 5a)(6z^2 + 4z - 5a) = 0, \quad a \in \mathbb{R}$;
21. $(z^7 - 1 + 3a)(-7z^2 - z + a) = 0, \quad a \in \mathbb{R}$.