

Find all the roots of each function.

Function
1. $f(x) = x^3 - 11x^2 + 40x - 50$
2. $f(x) = x^3 + 2x^2 - x - 2$
3. $f(x) = x^3 - 4x^2 + 6x - 4$
4. $f(x) = x^3 + 2x^2 - 3x + 20$
5. $f(x) = 2x^3 - x^2 + 28x + 51$
6. $f(x) = 2x^3 - 17x^2 + 90x - 41$
7. $f(x) = x^3 - 3x^2 + 9x + 13$
8. $f(x) = x^3 - 10x^2 + 34x - 40$
9. $f(x) = x^4 - 6x^3 + 12x^2 + 6x - 13$
10. $f(x) = x^4 + 7x^3 + 13x^2 - 23x - 78$
11. $f(x) = x^3 - 7x^2 + 17x - 15$
12. $f(x) = 2x^4 - 9x^3 + 2x^2 + 21x - 10$

Answers:

- 1) $5, 3 \pm i$ 2) $1, -2, -1$ 3) $2, 1 \pm i$ 4) $-4, 1 \pm 2i$ 5) $-3/2, 1 \pm 4i$ 6) $1/2, 4 \pm 5i$
7) $-1, 2 \pm 3i$ 8) $4, 3 \pm i$ 9) $\pm 1, 3 \pm 2i$ 10) $-3, 2, -3 \pm 2i$ 11) $3, 2 \pm i$ 12) $1/2, 2, 1 \pm \sqrt{6}$