

Find **all** of the zeros (real and complex) of each function. Neatly show your work on a separate piece of paper.

1. $f(x) = 4x^3 - 3x^2 - 100x + 75$

2. $f(x) = x^5 + 3x^4 - 19x^3 - 43x^2 + 18x + 40$

3. $f(x) = x^4 - x^3 - x^2 - x - 2$

4. $f(x) = 6x^3 + 5x^2 - 9x + 2$

5. $f(x) = 81x^4 - 256$

6. $f(x) = 4x^3 + x^2 + 16x + 4$

7. $f(x) = x^5 + 2x^3 + x$

8. $f(x) = 8x^3 - 27$

9. $f(x) = x^5 - 8x^3 - 9x$

10. $f(x) = x^3 + 7x^2 + 4x - 12$

11. $f(x) = x^4 + 6x^2 + 5$

12. $f(x) = 8x^6 + 999x^3 - 125$

13. What patterns do you notice in the number and type of zeros?

14. What do you notice about the complex solutions?