Alg 2 Hwk #34 Theorems of Algebra Fall 2019 Name:

Find ALL zeros, real and non-real for each polynomial. Give all real answers in EXACT form. Simplify non-real answers. Show your work.

1. $f(x) = 7x^4 - 6x^3 + 62x^2 - 54x - 9$

2. $y = x^4 - 2x^3 + 2x^2 - x - 42$

3. $f(x) = x^3 + 27$

4. Find just the remainder. $\frac{2x^6 - 174x^2 + 9}{x + 3}$. Show how you got your answer.

5. Is $x - 3$ a factor of $f(x) = x^3 - 7x^2 + 20x - 24$. Show work and give a reason for your answer.