Factoring and Expanding Roots of Polynomials Homework

For #1-4, create a polynomial from the following roots (don't forget your conjugates!)

1.) $0, 2, 5$

2.) $\pm 1, \pm\sqrt{2}$

3.) $-2,\ 3,\ 3i$

4.) $-4,\ 1+2i$

For #5-6, factor the following polynomials

5.) $f_{(x)} = x^3 - x^2 - 3x + 3$

6.) $f_{(x)} = x^5 + 15x^3 - 16x$

For #7-8, solve each polynomial by factoring

7.) $f_{(x)} = x^4 - 81$

8.) $f_{(x)} = x^4 - x^3 + 25x^2 - 25x$