Graphing Polynomials #1-7

For each polynomial:
- use synthetic division or long division to factor the polynomial
- write the equation of the polynomial in factored form
- list the zeros/multiplicities
- determine the end behavior
- sketch the graph

1.
$f(x) = 2x^3 + x^2 - 5x + 2$
$factor: \ (x+2)$

2.
$f(x) = 3x^3 + 2x^2 - 19x + 6$
$factor: \ (x-2)$

3.
$f(x) = x^4 - 4x^3 - 15x^2 + 58x - 40$
$factors: \ (x-5), \ (x+4)$

4.
$f(x) = x^4 - 9x^3 + 22x^2 - 32$
$factors: \ (x-4), \ (x+1)$

5.
$f(x) = 6x^3 + 41x^2 - 9x - 14$
$factor: \ (2x+1)$

Determine which method can be used to find the zeros. It is not necessary to find the zeros.
A. long division B. synthetic division C. either method

6.
$f(x) = 6x^5 + 4x^3 - 1x^2 - 9x - 1$
$factor: \ (2x^2+1)$

7.
$f(x) = 4x^3 - 9x^2 - x + 3$
$factor: \ (5x-1)$