ALG 2 Review 6.1-6.3

Perform the indicated operation. Express answer in standard form. Then classify by degree, then by # of terms.

① $(5x^3 - x + 3) + (x^3 - 9x^2 + 4x)$

② $(x^3 + 4x^2 - 5x) - (4x^3 + x^2 - 7)$

③ $(x-6)(5x^2 + x - 8)$

④ $(x-4)(x+7)(5x-1)$

Find the remainder using the remainder theorem.

⑤ $2x^3 - 11x^2 + 13x - 44$; $x - 5$

⑥ $5x^4 + 2x^2 - 15x + 10$; $x + 2$

Given the polynomial $f(x)$ and a factor of $f(x)$, factor the polynomial completely by factoring the quotient after using long division. Then, find the zeros, state any multiplicities, use EB to graph.

⑦ $f(x) = x^3 - 5x^2 - 2x + 24$; $x + 2$

⑧ $f(x) = x^3 - 11x^2 + 14x + 80$; $x - 8$

⑨ $f(x) = 9x^3 - 9x^2 - 4x + 4$; $x - 1$

⑩ $f(x) = 2x^3 + 7x^2 - 33x - 18$; $x + 6$