2. $x^3 - 6x^2 + 5x + 12$ has a factor $(x - (-1))$ compute all other factors:

$(x - 3)(x - 2)^2$

$(x - 3)^2(x - 2)$

$(x - 4)(x - 3)(x + 1)$

$(x - 3)(x + 2)(x + 4)$

Solution
Apply Long Division.
$(x - 4)(x - 3)(x + 1)$