2. $u^3 - 5u^2 + 2u + 8$ has a factor $(u - (-1))$ compute all other factors:

$(u - 4)(u - 3)(u + 3)$

$(u - 4)^2(u + 3)$

$(u - 4)(u - 2)(u + 1)$

$(u - 4)(u - 2)(u + 2)$

Solution
Apply Long Division.
$(u - 4)(u - 2)(u + 1)$