2. $p^3 + 3p^2 - p - 3$ has a factor $(p - (-3))$ compute all other factors:

$(p - 2)^2 (p + 1)$

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

$(p - 1) (p + 1) (p + 3)$

$(p + 1) (p + 2) (p + 4)$

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