1. $q^3 - 7q^2 + 12q$ has a factor $(q-0)$ compute all other factors:

$(q - 4)\, q\, (q + 1)$

$(q - 4)\, q\, (q + 4)$

$(q - 4)\, (q - 3)\, q$

$(q - 4)\, (q - 2)\, (q + 2)$

Solution
Apply Long Division.
$(q - 4)\, (q - 3)\, q$