4. $k^3 - 9k$ has a factor $(k - (-3))$ compute all other factors:

$(k - 4)(k + 2)^2$

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

$(k - 3)\, k\, (k + 3)$

$(k + 2)^2 (k + 3)$

Solution
Apply Long Division.
$(k - 3)\, k\, (k + 3)$