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

$k (k + 1) (k + 4)$

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

$(k - 1) (k + 1) (k + 3)$

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

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