1. $v^3 + 2v^2 - 15v - 36$ has a factor $(v - (-3))$ compute all other factors:

$(v - 2)(v + 3)^2$

$(v + 3)^2(v + 4)$

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

$(v + 1)(v + 3)^2$

Solution
Apply Long Division.

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