1. $w^3 - 3w^2 - 10w + 24$ has a factor $(w - (-3))$ compute all other factors:

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

$(w - 4)(w - 2)w$

$(w - 4)(w - 2)(w + 3)$

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

Solution
Apply Long Division.
$(w - 4)(w - 2)(w + 3)$