5. $h^3 + 3h^2 - 4h - 12$ has a factor $(h-(-3))$ compute all other factors:

$(h - 1)\, h\, (h + 3)$

$(h + 1)\, (h + 2)\, (h + 3)$

$(h - 2)\, (h + 2)\, (h + 3)$

$(h - 1)\, (h + 3)\, (h + 4)$

Solution
Apply Long Division.
$(h - 2)\, (h + 2)\, (h + 3)$