2. $g^3 - 13g - 12$ has a factor $(g-(-3))$ compute all other factors:

$(g - 4)\, g\, (g + 1)$

$(g - 4)\, (g - 1)\, (g + 4)$

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

$(g - 4)\, (g - 3)\, (g - 2)$

Solution
Apply Long Division.
$(g - 4)\, (g + 1)\, (g + 3)$