3. $a^3 + a^2 - 6a$ has a factor $(a - (-3))$ compute all other factors:

$(a - 3)\, a^2$

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

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

$(a - 3)^2\, (a + 3)$

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