$$(u-2) (u+1) (u+2)$$
 $(u-2) (u+1) (u+3)$
 $(u-2) (u-1) u$
 $(u-2) (u-1)^2$
Solution

Apply Long Division.

(u-2)(u-1)u

1. $u^3 - 3u^2 + 2u$ has a factor (u-0) compute all other factors: