$$(v-3) (v-2) (v+4)$$
 $(v-3) (v+2) (v+4)$ 
 $(v-4) (v-3) (v+1)$ 
 $(v-3) v^2$ 
Solution
Apply Long Division.
 $(v-4) (v-3) (v+1)$ 

1.  $v^3 - 6v^2 + 5v + 12$  has a factor (v - (-1)) compute all other factors: