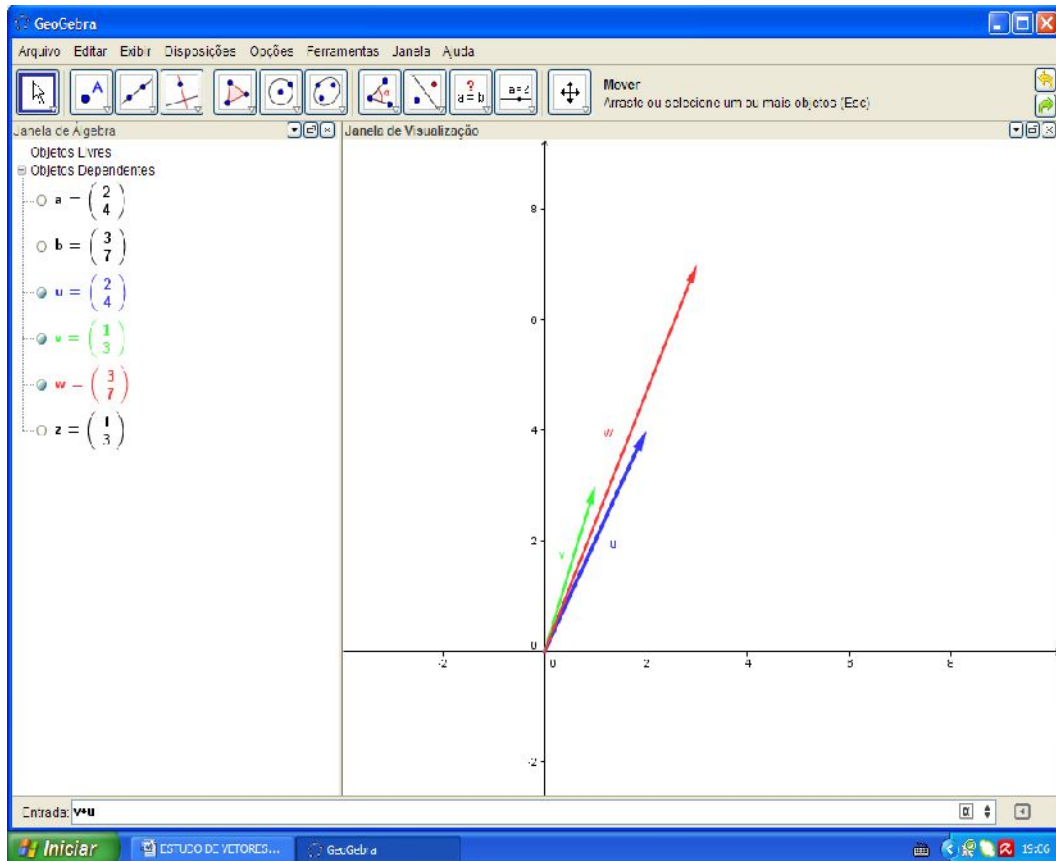


## Propriedade da soma

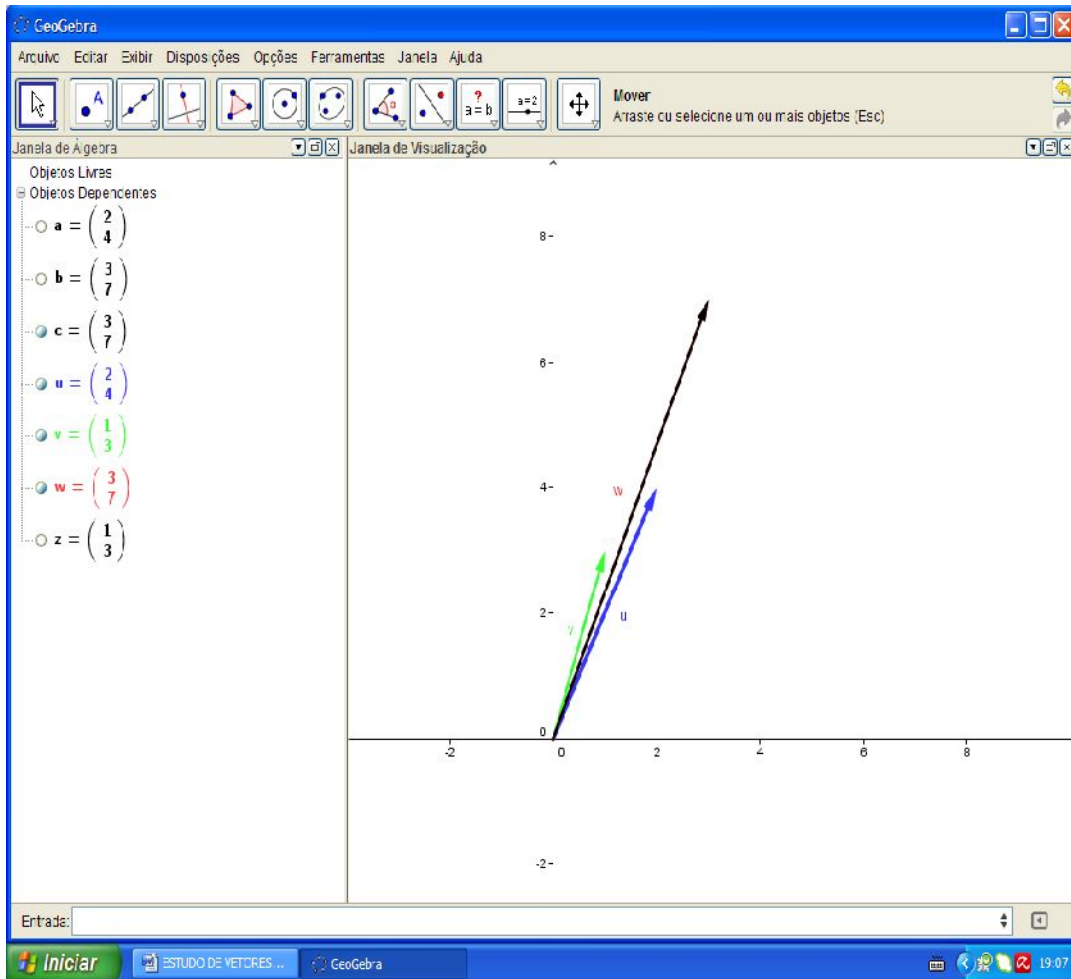
seja os vetores  $u = \text{Vetor}[(2, 4)]$ ,  $v = \text{Vetor}[(1, 3)]$  e  $w = \text{Vetor}[(3, 7)]$  temos:

- i) Soma de vetores  $u + v = v + u$  (comutativa)

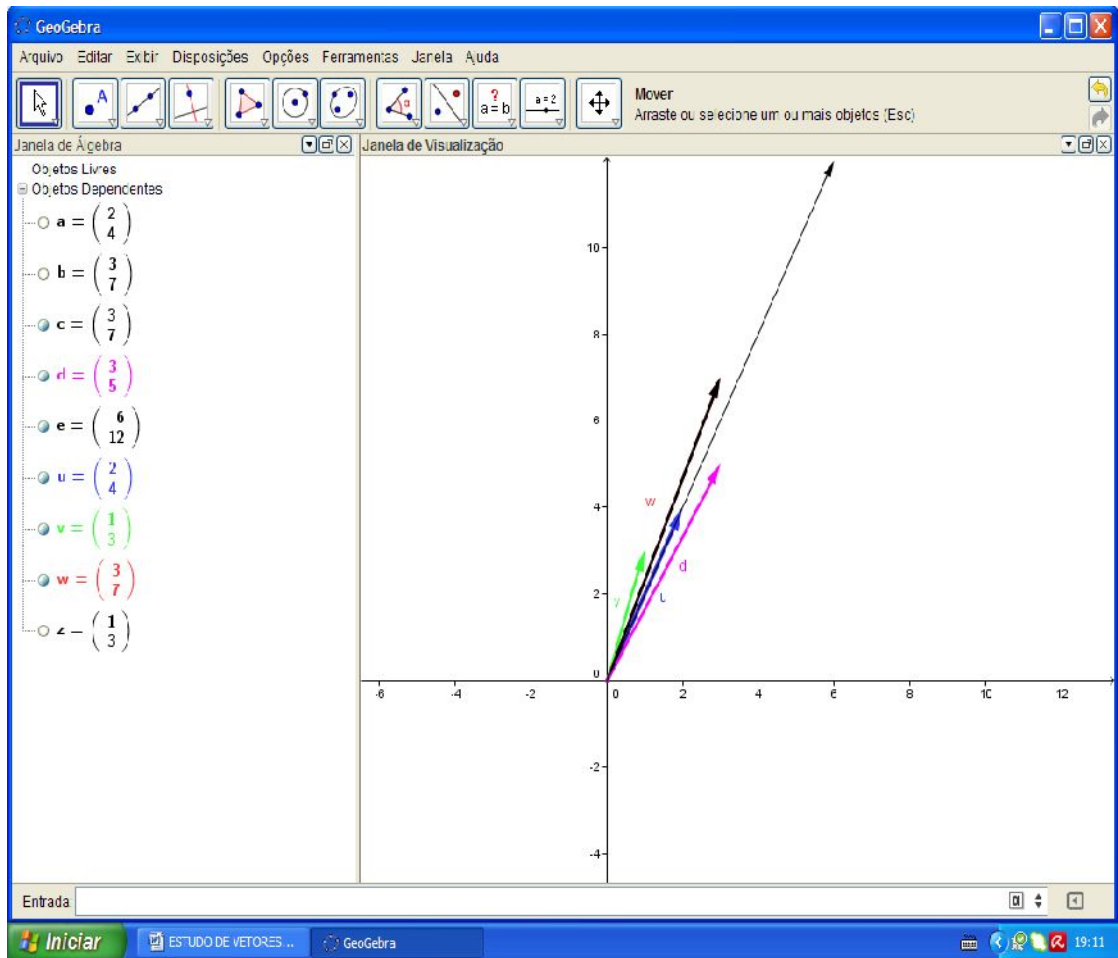
u+v



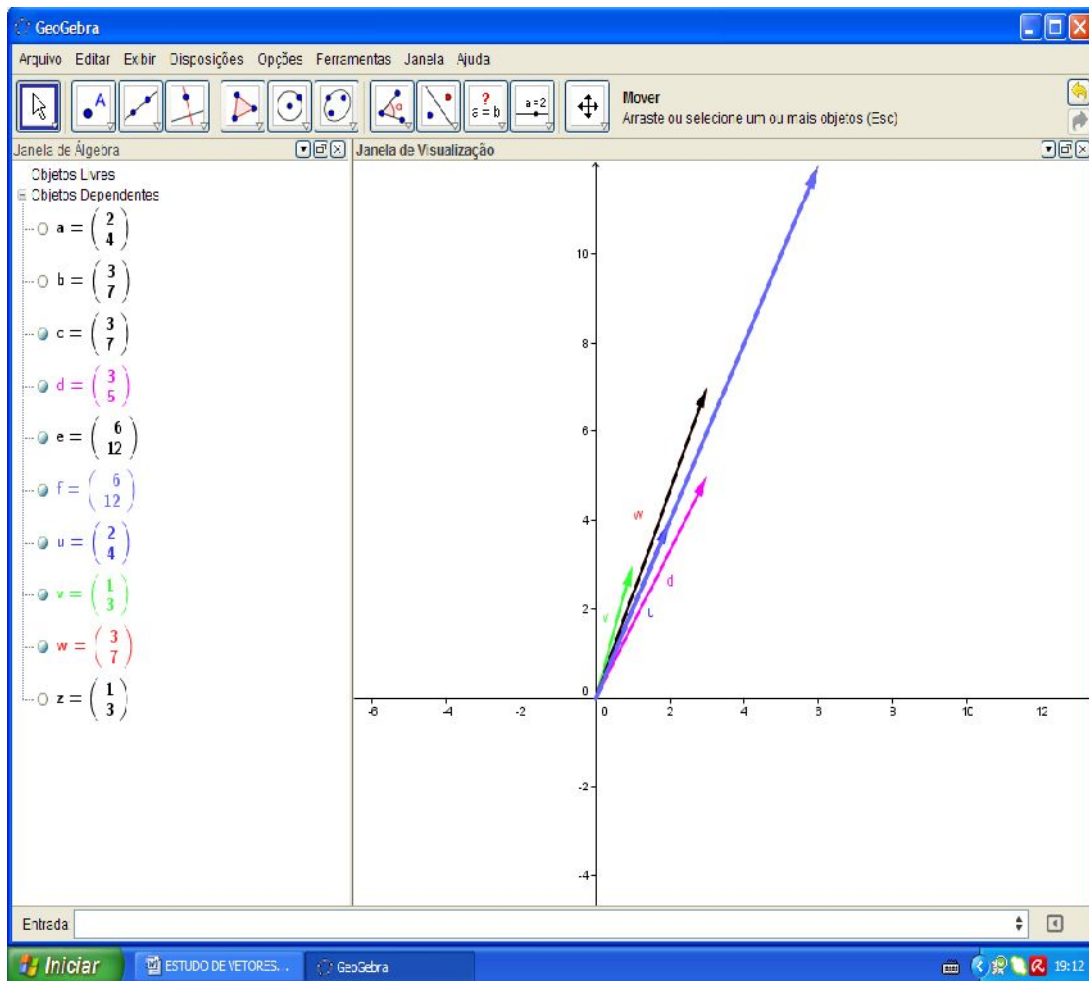
V+U

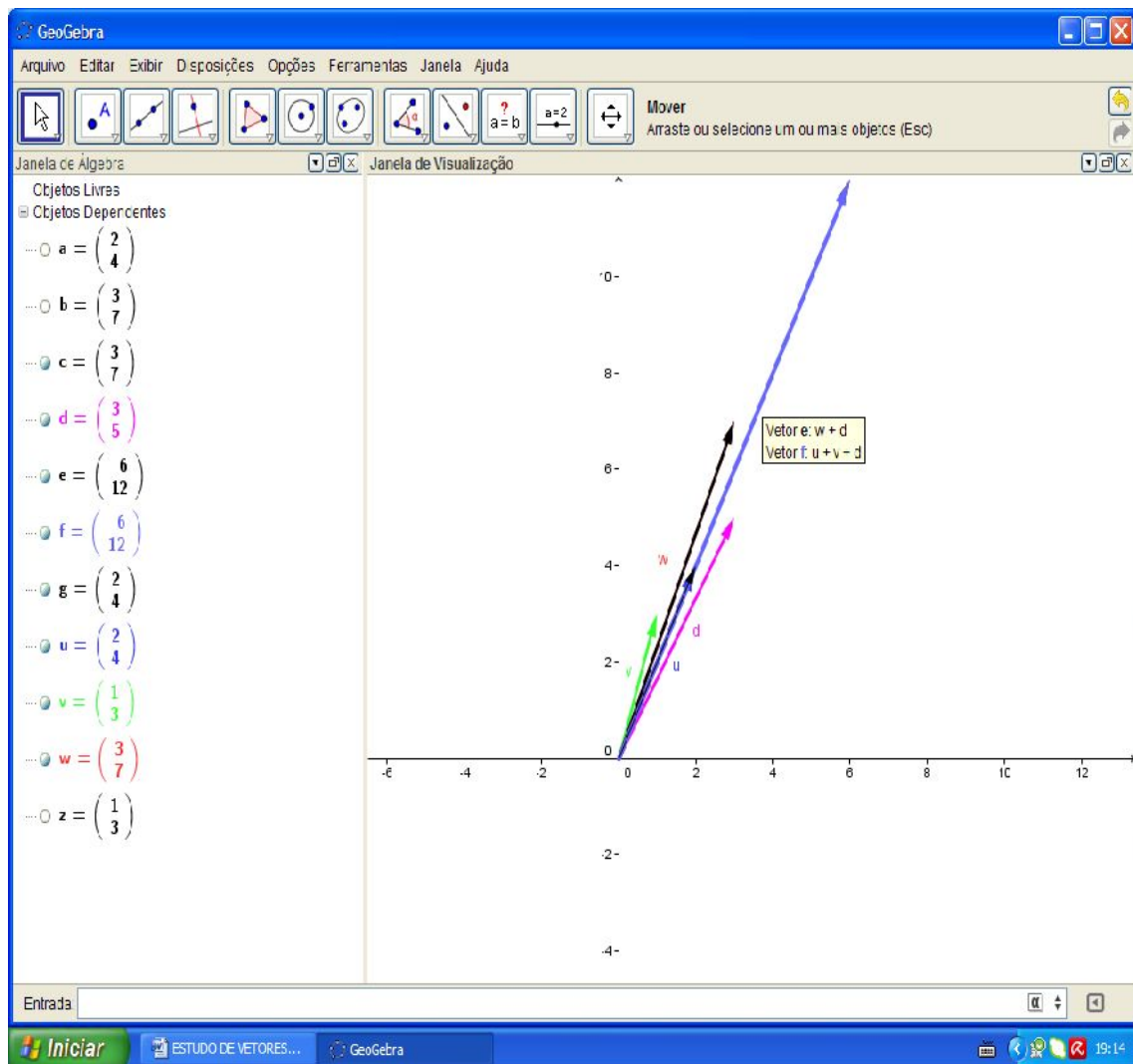


ii) Soma de vetores  $(u+v)+d=u+(v+d)$  onde  $w+u=u+(v+d)$   
 $w+d$



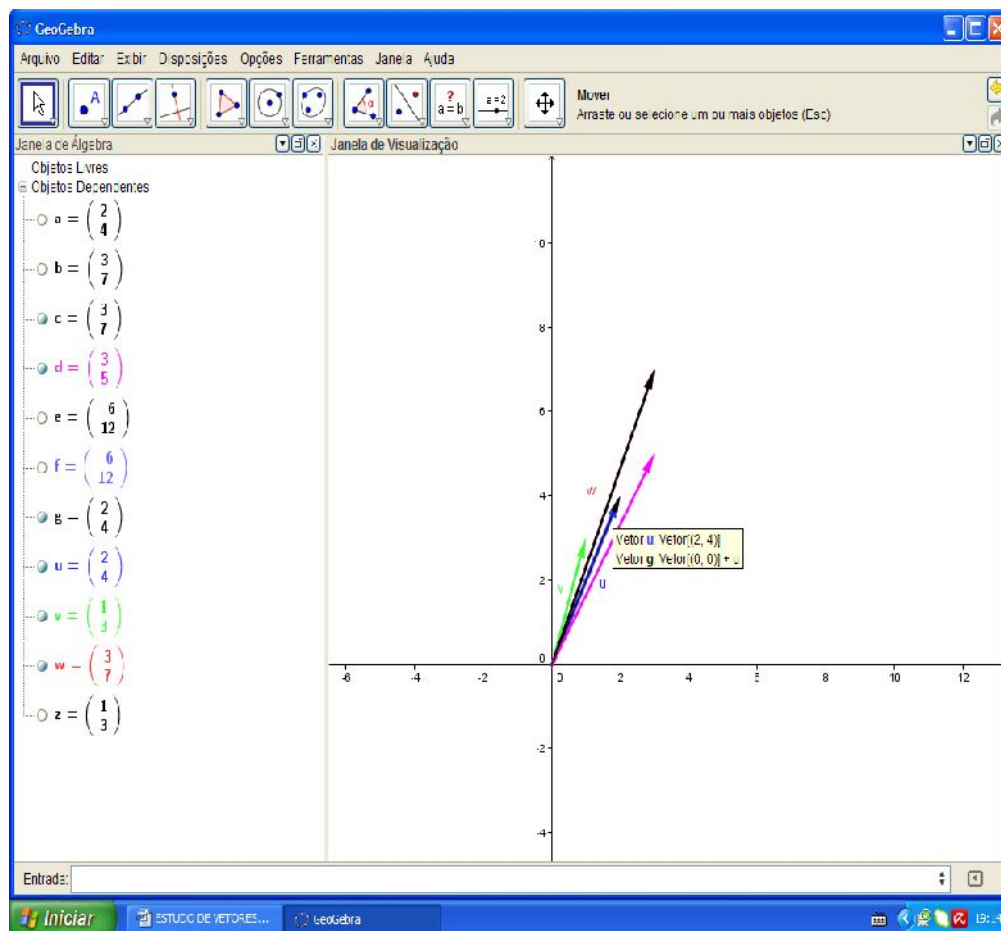
$$u+(v+d)$$





iii) Existe um único vetor nulo tal que  $u + 0 = 0 + u = u$

Seja vetor  $[(0,0)] + u$  temos:



Faça  $u + \text{vetor}[(0,0)]$  como exercício.

iv) Qualquer que seja  $u$  temos apenas um vetor  $-u$  (ou seja oposto de  $u$ ).

