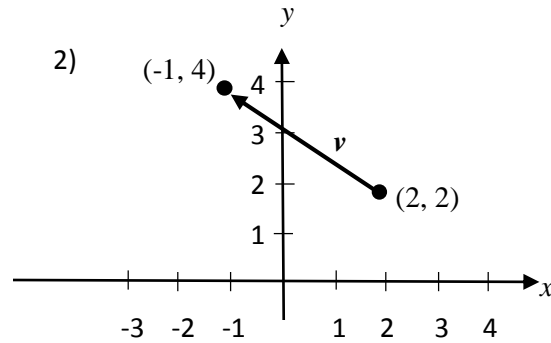
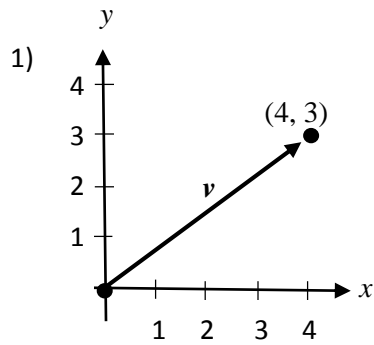


**Component Form of a Vector**

For each of the following ..... (a) find the component form of the vector  
 (b) sketch the vector in standard position



3) initial point:  $(3, -2)$   
 terminal point:  $(3, 3)$

4) initial point:  $(5/2, 1)$   
 terminal point:  $(-2, -3/2)$

5) tail:  $(-3, -5)$   
 head:  $(5, 1)$

6) tail:  $(-4.2, 5)$   
 head:  $(3.7, -12.9)$

**Vector Operations**

For each of the following, find:

- (a)  $\mathbf{u} + \mathbf{v}$
- (b)  $\mathbf{u} - \mathbf{v}$
- (c)  $2\mathbf{u} - 3\mathbf{v}$
- (d)  $\mathbf{v} + 4\mathbf{u}$

7)  $\mathbf{u} = \langle 4, 2 \rangle$  and  $\mathbf{v} = \langle 7, 1 \rangle$

8)  $\mathbf{u} = \langle -5, -2 \rangle$  and  $\mathbf{v} = \langle -4, 0 \rangle$