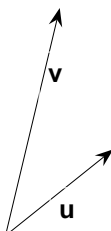


5. 1. Express the vector  $\vec{v} = \overrightarrow{AB}$  where  $A = (3, 2, 1)$  and  $B = (-1, 7, 4)$  in the form of  $\vec{v} = v_1\vec{i} + v_2\vec{j} + v_3\vec{k}$ .

*Solution.* We have

$$\vec{v} = \langle -1 - 3, 7 - 2, 4 - 1 \rangle = \langle -4, 5, 3 \rangle = -4\vec{i} + 5\vec{j} + 3\vec{k}.$$

5. 2. a. Given below are the vectors  $\vec{u}$  and  $\vec{v}$ . Clearly graph  $\vec{u} + \vec{v}$ .



- b. If  $\vec{u} = \langle 2, 1 \rangle$  and  $\vec{v} = \langle -4, 3 \rangle$ , what is  $\vec{u} + \vec{v}$ ?

*Solution.* We have (b)

$$\vec{u} + \vec{v} = \langle 2 - 4, 1 + 3 \rangle = \langle -2, 4 \rangle.$$

And for part (a):

