Per tant $\vec{v}(-1,3)$

20 $\vec{u}(5,-b)$ $\vec{v}(a,2)$

$$\left.\begin{array}{l}\vec{u}\perp\vec{v}\\ \text{i } |\vec{v}|=13\end{array}\right\} \Leftrightarrow \left.\begin{array}{l}\vec{u}\cdot\vec{v}=0\\ \sqrt{a^2+2^2}=13\end{array}\right\} \Leftrightarrow \left.\begin{array}{l}(5,-b)(a,2)=0\\ a^2+4=13\end{array}\right\} \Leftrightarrow$$

$$\Leftrightarrow \left.\begin{array}{l}5a-2b=0\\ a^2=13-4\end{array}\right\} \Leftrightarrow \left.\begin{array}{l}5a-2b=0\\ a=\pm\sqrt{9}=\pm 3\end{array}\right\} \Rightarrow$$

Si $a=-3$ $\quad 5(-3)-2b=0$

$-15-2b=0$

$2b=-15$

$b=-15/2$

Si $a=3$ $\quad 5\cdot 3-2b=0$

$15-2b=0$

$2b=15$

$b=15/2$

Tenim 2 parells de vectors que compleixen les dues condicions:

$\vec{u}_1\left(5,\frac{15}{2}\right), \vec{v}_1(-3,2)$

observem $\vec{u}\cdot\vec{v}=0$ ja que $-15+15=0$

$|\vec{v}|=13$ ja que $\sqrt{(-3)^2+2^2}=\sqrt{13}$

$\vec{u}_2\left(5,-\frac{15}{2}\right), \vec{v}_2(3,2)$

observem $\vec{u}\cdot\vec{v}=0$ ja que $15-15=0$

$|\vec{v}|=13$ ja que $\sqrt{3^2+2^2}=\sqrt{13}$.