We say that $B=\{\vec{u},\vec{v}\}$ is an orthogonal basis if the vectors that form it are perpendicular. In other words, $\vec{u}$ and $\vec{v}$ form an angle of 90°.

$\vec{u}=(3,0), \vec{v}=(0,-2)$ form an orthogonal basis since the scalar product between them is zero and this a sufficient condition to be perpendicular:

$$\vec{u}\cdot\vec{v}=3\cdot 0+0\cdot(-2)=0$$

We say that $B=\{\vec{u},\vec{v}\}$ is an orthonormal basis if the vectors that form it are perpendicular and they have length 1. Namely, $\vec{u}$ and $\vec{v}$ form an angle of 90° and $|\vec{u}|=1$, $|\vec{v}|=1$.

$\vec{u}=(1,0), \vec{v}=(0,-1)$ form an orthonormal basis since the vectors are perpendicular (its scalar product is zero) and both vectors have length 1.

Perpendicular: $\vec{u}\cdot\vec{v}=1\cdot 0+0\cdot(-1)=0.$

Unitary vectors (length 1): $|\vec{u}|=\sqrt{1^2+0^2}=\sqrt{1}=1, |\vec{v}|=\sqrt{0^2+(-1)^2}=\sqrt{1}=1.$