For cyclic Z-modules $\mathrm{Z}_{m}$ and $\mathrm{Z}_{n}$ with generators a and b , respectively, show that $\mathrm{Z}_{m} \otimes_{Z} \mathrm{Z}_{n}$ is isomorphic to $\mathrm{Z}_{(m, n)}$ with generator $\mathrm{a} \otimes \mathrm{b}$, where $(m, n)$ is the greatest common divisor of $m$ and $n$.

