

Recall from class that an integer n is **even** if it is of the form

$$n = 2k$$

for some $k \in \mathbb{Z}$. Likewise, an integer n is called **odd** if it is of the form

$$n = 2k + 1$$

for some $k \in \mathbb{Z}$.

Let n be an integer. Prove that n is odd if and only if $n + 5$ is even.