# Exercise: Independence of two events - II

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0/1 point (graded)

Let $A$ be an event, a subset of the sample space $\Omega$. Are $A$ and $\Omega$ independent?

No, they are dependent ▾ ✖ **Answer:** Yes, they are independent

Answer:
Yes, because $\mathbf{P}(A \cap \Omega) = \mathbf{P}(A) = \mathbf{P}(A) \cdot 1 = \mathbf{P}(A) \cdot \mathbf{P}(\Omega)$.

Intuitively, $\mathbf{P}(A)$ represents our beliefs about the likelihood that $A$ will occur. If we are told that $\Omega$ occurred, this does not give us any new information; we already knew that $\Omega$ is certain to occur. For this reason, $\mathbf{P}(A \mid \Omega) = \mathbf{P}(A)$.

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✖ Incorrect (0/1 point)