Simplifications (warm-up)

When A and B are logical expressions, and you say $A \equiv B$, you mean that they have the same truth values. (You can also write this as $A \leftrightarrow B$.)
For example:

- $\neg\neg x \equiv x$ (obvious)
- $x \vee (x \wedge y) \equiv x$

  Similarly, you can write $x \vee (x \wedge y) \leftrightarrow x$. In other words, $x \vee (x \wedge y)$ is true if and only if x is true.
- $x \vee \neg x \equiv T$

  In other words, $x \vee \neg x$ is always true, no matter what x is.
- $x \wedge \neg x \equiv F$

  In other words, $x \wedge \neg x$ is never true, no matter what x is.