Negate Abraham Lincoln’s statement:

“You can fool some people all of the time, and some people none of the time, but you cannot fool all people all of the time.”

Introduce symbols to clarify the structure of the sentence

(“sets” will be formally studied in ch. 2)

- $P := \text{“the set of all people”}$
- $T := \text{“the set of all times”}$
- $F(x, t) := \text{“you can fool } x \text{ at } t$"

Then Lincoln’s statement may be expressed as

$$(\exists x \forall t F(x, t)) \land (\exists x \forall t \neg F(x, t)) \land \neg (\forall x \forall t F(x, t)).$$

The negation of Lincoln’s statement is

$\neg \left( (\exists x \forall t F(x, t)) \land (\exists x \forall t \neg F(x, t)) \land \neg (\forall x \forall t F(x, t)) \right),$

which may be algebraically simplified to

$\neg (\exists x \forall t F(x, t)) \lor \neg (\exists x \forall t \neg F(x, t)) \lor (\forall x \forall t F(x, t))$

which is logically equivalent to

$$(\forall x \exists t \neg F(x, t)) \lor (\forall x \exists t F(x, t)) \lor (\forall x \forall t F(x, t))$$

which may be read as

“Everybody can at some time not be fooled, or everyone can at some time be fooled, or you can fool all the people all the time.”