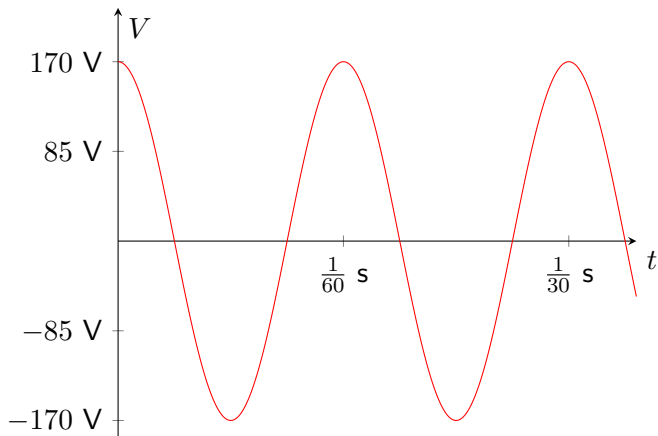


AC Circuits

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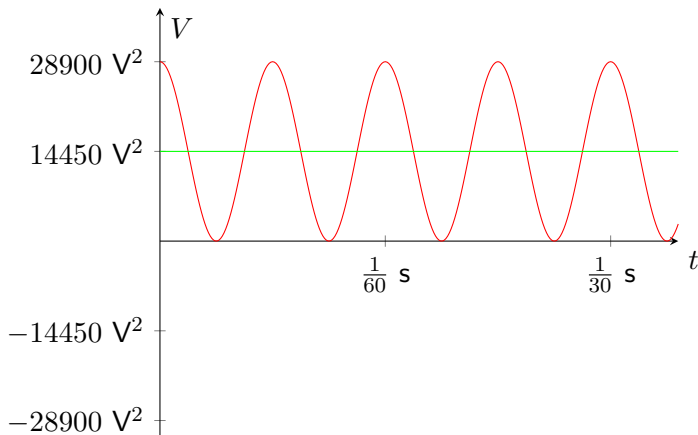
Wall Outlet Voltage in the United States



RMS means Root Mean Square.

- ▶ Root Mean Square means the root of the mean of the square of something.
- ▶ You have a bunch of voltages at different points in time.
- ▶ Square each voltage.
- ▶ Average the squares. (This is the *mean*.)
- ▶ Take the square root to get back to a voltage.

RMS Wall Outlet Voltage in the United States



$$V_{\text{RMS}} = \sqrt{14450 \text{ V}^2} = 120 \text{ V}$$

Relationship between peak voltage and RMS voltage

$$V_{\text{RMS}} = \frac{V_0}{\sqrt{2}}$$