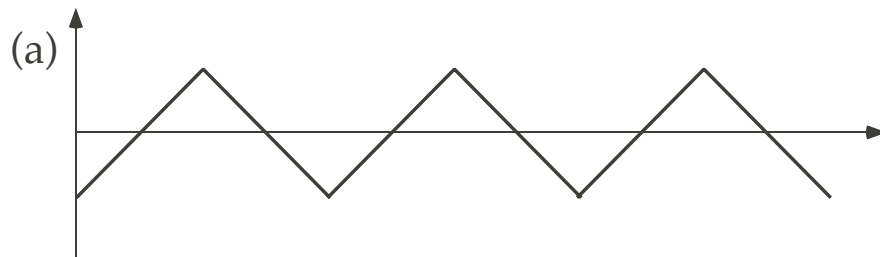


Advanced Reading Questions: Faraday's Law Lab

1. Using equation 9, calculate the emf, \mathcal{E}_0 , induced in the 2000-turn detector coil when a sine wave of frequency 1 kHz and amplitude $V_0 = 10$ V is applied to the field coil and the area of the detector coil is 5.67×10^{-4} m². Assume that $\theta = 0^\circ$.

2. Sketch the time derivative of the following sawtooth signal on the same axis as the signal. Note that time is the horizontal axis.



Sketch and label the function $\sin x$ and its derivative, on the horizontal x axis.

