

43. (a) Voltage is proportional to inductance (by Eq. 31-37) just as, for resistors, it is proportional to resistance. Since the (independent) voltages for series elements add ($V_1 + V_2$), then inductances in series must *add* just as was the case for resistances.
- (b) To ensure the independence of the voltage values, it is important that the inductors not be too close together (the related topic of mutual inductance is treated in §31-12). The requirement is that magnetic field lines from one inductor should not have significant presence in any other.
- (c) Just as with resistors, $L_{\text{eq}} = \sum_{n=1}^N L_n$.