

62. (a) We use $P = V^2/R \propto V^2$, which gives $\Delta P \propto \Delta V^2 \approx 2V\Delta V$. The percentage change is roughly $\Delta P/P = 2\Delta V/V = 2(110 - 115)/115 = -8.6\%$.
- (b) A drop in V causes a drop in P , which in turn lowers the temperature of the resistor in the coil. At a lower temperature R is also decreased. Since $P \propto R^{-1}$ a decrease in R will result in an increase in P , which partially offsets the decrease in P due to the drop in V . Thus, the actual drop in P will be smaller when the temperature dependency of the resistance is taken into consideration.