40. (a) The resonance frequency f_0 of the circuit is about $(1.50\,\text{kHz} + 1.30\,\text{kHz})/2 = 1.40\,\text{kHz}$. Thus, from $2\pi f_0 = (LC)^{-1/2}$ we get

$$L = \frac{1}{4\pi^2 f_0^2 C} = \frac{1}{4\pi^2 (1.40 \times 10^3\,\text{Hz})^2 (5.50 \times 10^{-6}\,\text{F})} = 2.35 \times 10^{-3}\ \text{H} .$$

(b) From the resonance curves shown in the textbook, we see that as R increases the resonance curve gets more spread out, so the two frequencies at which the amplitude is at half-maximum level will move away from each other.