2. Lissajous bridge (6 points) — *Jaan Kalda.* A circuit has four nodes A, B, E, D. An AC source of amplitude V is applied between A and E. A resistor R_1 connects A to B and a capacitor C connects B to E; a resistor R_2 connects A to D and an inductor L connects D to E. A potentiometer with a sliding contact P is connected between A and E. The voltage between P and B feeds the x-input of an oscilloscope, and the voltage between P and D feeds the y-input; both input channels have the same gain. The oscilloscope plots the voltage V_x from the x-input and the voltage V_y from the y-input in the V_x–V_y-plane. The position of the sliding contact P is adjusted until the figure on the screen degenerates into a line segment. It appears that in that case, the line segment makes an angle α with the x-axis, and the sliding contact P divides the potentiometer's length in the ratio $1 : 2$ from left to right in the figure. Find the amplitude of the voltage between B and P.

