This question is about transmission lines and matching

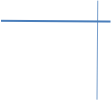
(a) Given a 9-volt source with impedance Rs = 25Ω is connected to a transmission line with Z0 = 50Ω, length = 0.1m and Vp = 1\*108 m/s followed by a load ZL = 75Ω calculate.

* (i)  The initial voltage on the line.  [1 mark]
* (ii)  The voltage at the load after 5T (where T is the time taken to travel from one end of the line to the other), sketch a bounce diagram
* (iii)  The voltage the line will settle to.
* (iv)  When and why are transmission lines required?

**Question 2 continued**

(b) Given the PCB mounted 200MHz chip antenna shown in Figure 2 and a measured value of 20+70j design an L match. State all assumptions.

Matching circuit

Length =7.2cm

Figure 2 PCB chip antenna with matching area.