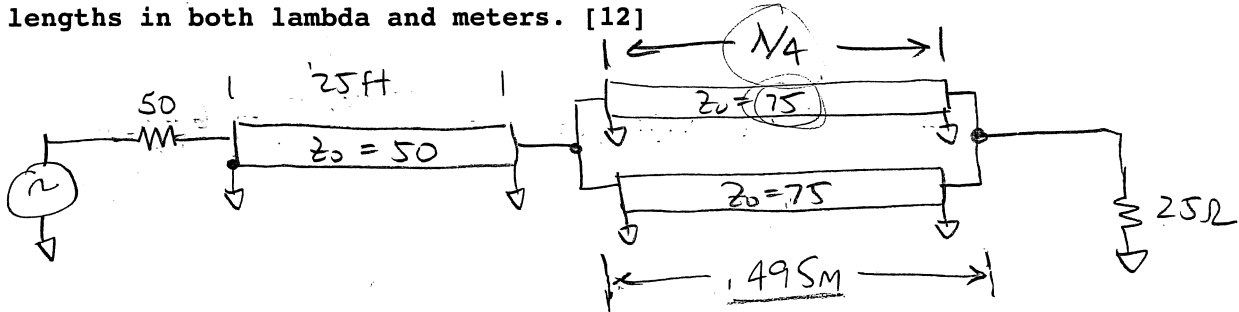


specify 50  $\Omega$  xmittr

6. A <sup>25</sup>25 ohm resistive load must be matched to a 100 Mhz transmitter connected to a 25 ft length of 50 ohm coax cable. The matching network may be made from either 50 ohm or 75 ohm coax cable both with velocity of propagation of .66c. No lumped elements or stubs may be used. Show a diagram of your solution with matching network lengths in both lambda and meters. [12]



Lengths of  $\frac{\lambda}{4}$  matching sections:

$$\lambda = \frac{1666}{100 \times 10^6} = 1.98 \text{ meters}$$

$$\frac{\lambda}{4} = .495 \text{ meters for each } 75 \Omega \text{ length}$$

$$Z_m = \sqrt{Z_0 Z_L}$$

$$= \sqrt{50 \cdot 25} = 35 \Omega \text{ matching } Z_0$$

use 2, 75  $\Omega$  sections  
in parallel