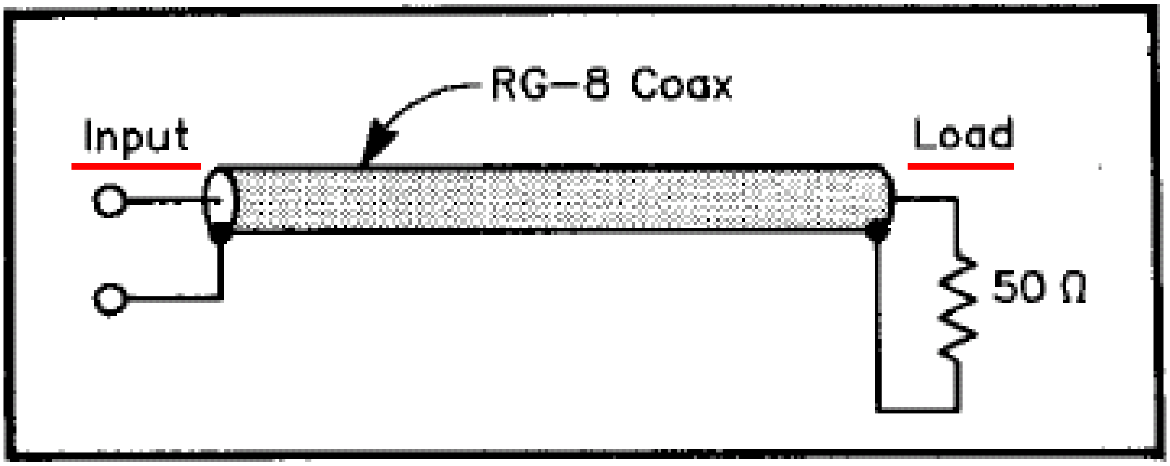


**Fig 1—A length of RG-8 with 50 Ω connected across one end will look like 50 Ω at the input end of the line.**

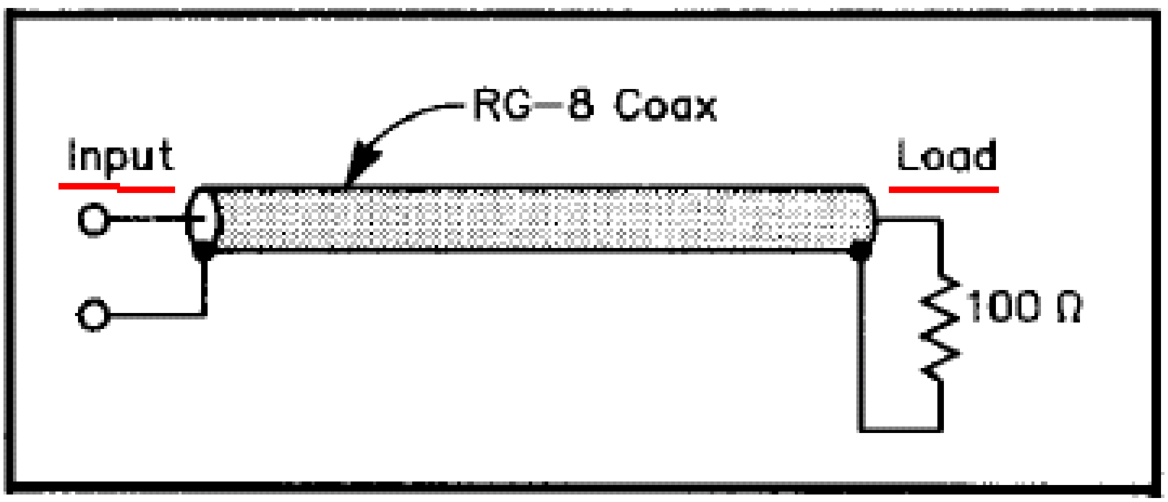


**Fig 2—With 100 Ω connected at the load end of a length of RG-8, the problem is to determine what the line looks like at the input end.**

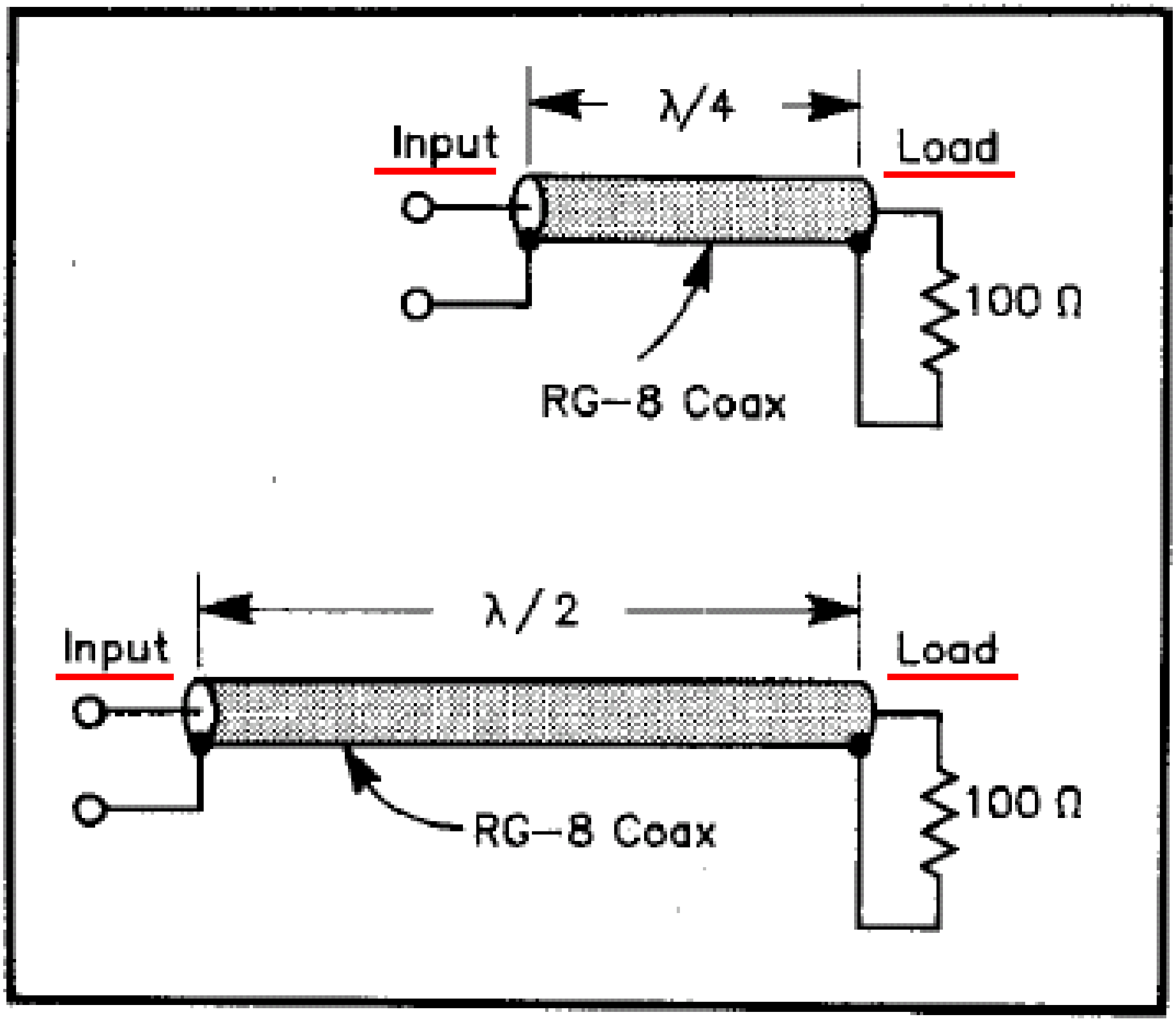


Fig 3—Part of the answer to the problem posed in Fig 2. When the line is ¼ λ long, it looks like 25 Ω at the input end when the load is 100 Ω. When the line is ½ λ long, the input end shows an impedance equal to that connected at the load end.

**Input Impedance of 50 Ohm Characteristic Impedance (Zo) Coaxial Cable Effected by Antenna (Load) Impedance (ZL)**

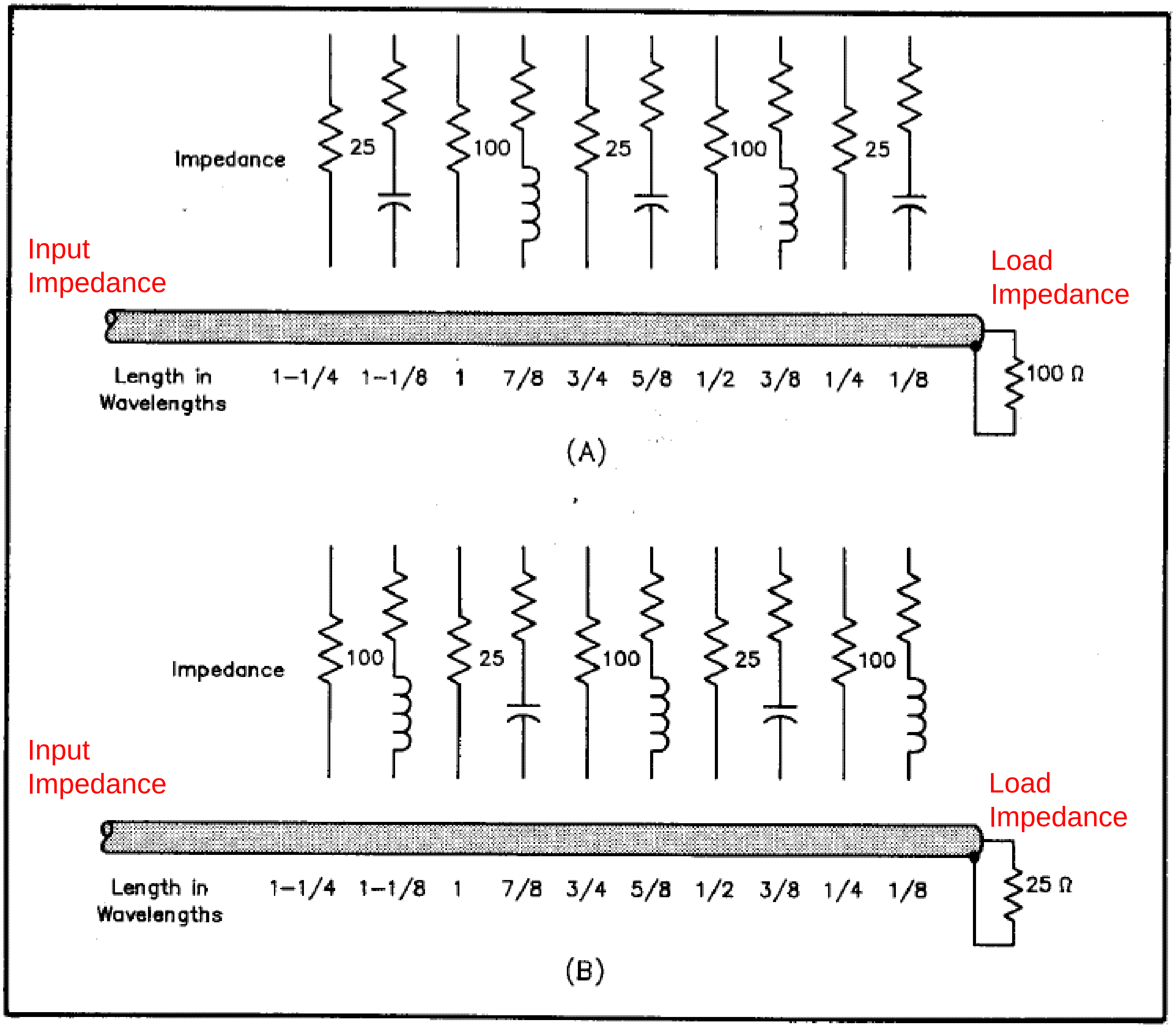


Fig 4—These two examples show how the input impedance of a 50-Ω line varies with the length of the line when the line is terminated in something other than the characteristic impedance of the line. It should be realized that the impedance is continually changing along the line, repeating every half wavelength. The impedance is purely resistive only at the ¼-λ (and multiples) point, and it becomes reactive either side of this point. When the load includes reactance as well as resistance, the impedance along the line varies in the same manner as shown here, but the purely resistive points do not occur at multiples of ¼ λ from the load.