1. Consider a 3-φ distribution feeder as shown below:

Compute the following:

a. The source voltage $V_S$, if $V_R$ is to be maintained at 4.4 kV (line value).

b. The source current and power factor at the source.

c. The total complex power supplied by the source.

d. How much reactive power should be connected to the source bus for obtaining unity power factor at the source bus?