



$$Z_i = 1$$

$$i = \{1, 2, 3, 4\}$$

$$Z_1 = -j$$

$$Z_2 = 1$$

$$Z_3 = -j$$

$$Z_4 = j$$

$$Z = \frac{1}{Y}$$

$$Y = \frac{1}{Z}$$

$$Z_{23} = Z_2 + Z_3 = 1 + (-j) = 1 - j$$

$$Y_{234} = Y_{23} + Y_4 = \frac{1}{1-j} + \frac{1}{j} = \frac{1}{1-j} \cdot \frac{1+j}{1+j} + (-j) =$$

$$= \frac{1+j}{2} - j = \frac{1}{2} + \frac{j}{2} - j = \frac{1}{2} - \frac{j}{2} = \frac{1-j}{2}$$

$$Z_{234} = \frac{2}{1-j} = Y_{234} = \frac{2}{1-j} \cdot \frac{1+j}{1+j} = \frac{2(1+j)}{1+j-j+1} = \frac{2(1+j)}{2} =$$

$$= 1 + j$$

$$Z_{AB} = Z_1 + Z_{234} = -j + 1 + j = 1$$