

$$\frac{V_1 + 4j}{j} - \frac{V_1 + 4j}{cj} + \frac{V_1}{-4j} + \frac{V_1}{4} = 0$$

c: 2.

Find V_1 in cartesian coordinates, i.e., find a and b :

$$V_1 = a + bj$$

$$\frac{V_1 + 4j}{j} - \frac{V_1 + 4j}{2j} + \frac{V_1}{-4j} + \frac{V_1}{4} = 0$$

$$\frac{4V_1 + 16j}{4j} + \frac{(-2V_1 - 8j)}{4j} + \frac{(-V_1)}{4j} + \frac{(V_1 j)}{4j} = 0$$

$$V_1 + jV_1 + 8j = 0$$

$$V_1 = \frac{-8j}{1+j} \cdot \left(\frac{1-j}{1-j} \right)$$

$$V_1 = \frac{-8j - 8}{1+1} = -4 - 4j$$

$$a = -4$$

$$b = -4$$