Problem O.6

The op-amp used in the circuits in this problem has a very large open-loop gain, very large input resistance, rail-to-rail input common-mode voltage range and rail-to-rail output voltage swing.

a) When the op-amp is connected as shown in Figure 1(a), the DC output voltage is found to be $V_O = 10 \text{ mV}$. What is the input offset voltage $V_{OS}$ of the op-amp?

![Figure 1(a)](image1.png)

b) The same op-amp from part (a) is used in the circuit shown in Figure 1(b). The DC output voltage is found to be $V_O = 1.006 \text{ V}$. What is the common-mode rejection ratio (CMRR) of the op-amp?

![Figure 1(b)](image2.png)