A 741 op amp shown in the circuit given below has an open-loop voltage gain of 80000, an input resistance of 2 MΩ, and an output resistance of 140 Ω. Calculate the output voltage $v_o$ in the op amp circuit.

The output voltage of the op amp is [ ] mV.
The op amp in the circuit given below has $R_I = 100 \, \text{k}\Omega$, $R_O = 100 \, \Omega$, $v_S = 2 \, \text{mV}$, and $A = 100,000$.

Calculate the output voltage $v_o$ for the given op amp circuit.

The output voltage $v_o$ for the given op amp circuit is blank mV.
The op amp in the circuit given below has $R_f = 100 \, \text{k}\Omega$, $R_0 = 100 \, \Omega$, $V_S = 2 \, \text{mV}$, and $A = 100,000$.

Calculate the differential voltage $V_d$. ($V_d = \text{voltage between +ve and –ve input}$)

The differential voltage $V_d$ is $\underline{\hspace{2cm}} \, \text{nV}$. 
4. Calculate the output voltage of the op amp circuit given below, where $v_1 = 2.6 \text{ V}$ and $v_2 = 1.3 \text{ V}$.

![Op Amp Circuit Diagram]

The output voltage of the op amp circuit is $\_\_\_\_\_\_\_\_\_\_ \text{ V}$. 
Find the output voltage $v_o$ for the op amp circuit given below, where $V = 4$ V.

The output voltage $v_o$ for the given op amp circuit is $\boxed{\phantom{0}}$ V.
Find the voltage gain $v_0/v_s$ of the circuit given below, where $R_1 = 10 \text{ k}\Omega$ and $R_2 = 14 \text{ k}\Omega$.

The voltage gain $v_0/v_s$ of the circuit is \_\_\_.

Calculate the voltage ratio $v_0/v_s$ for the op amp circuit given below, where $R = 12 \, \text{k}\Omega$. Assume that the op amp is ideal.

The voltage ratio $v_0/v_s$ for the op amp circuit is _______. 

(value: 10.00 points)
Consider the op amp circuit given below, where $R_1 = 17 \, \text{k}\Omega$ and $v_s = 1 \, \text{V}$.

Calculate the output voltage $v_o$ for the given circuit.

The output voltage $v_o$ is $\underline{\text{V}}$. 
Consider the circuit below.

Identify the ratio \( \frac{v_0}{i_s} \) in the given op amp circuit.

- \( \frac{v_0}{i_s} = - \left( R_1 + R_3 + \frac{K_1 K_3}{R_2} \right) \)
- \( \frac{v_0}{i_s} = - \left( R_1 + \frac{K_3}{R_1} \right) \)
- \( \frac{v_0}{i_s} = - \left( R_1 + R_2 + \frac{K_1}{R_2} \right) \)
- \( \frac{v_0}{i_s} = - \left( R_2 + R_3 + \frac{K_2 K_3}{R_1} \right) \)
Find the value of the ratio $\frac{v_o}{i_s}$ for $R_1 = 17 \text{ k}\Omega$, $R_2 = 22 \text{ k}\Omega$, and $R_3 = 36 \text{ k}\Omega$.

The value of the ratio $\frac{v_o}{i_s} = \boxed{ \text{k}\Omega}$.
Consider the circuit below.

Identify the ratio $\frac{v_o}{i_s}$ in the given op amp circuit.

- $\frac{v_o}{i_s} = -(R_1 + R_2 + \frac{K_1}{R_2})$
- $\frac{v_o}{i_s} = -(R_1 + R_3 + \frac{K_1K_2}{R_2})$
- $\frac{v_o}{i_s} = -(R_1 + \frac{K_2}{R_1})$
- $\frac{v_o}{i_s} = -(R_2 + R_3 + \frac{K_2K_3}{R_1})$
In the circuit given below, $R_1 = 20 \text{ k}\Omega$, $R_2 = 76 \text{ k}\Omega$, and $R_3 = 12 \text{ M}\Omega$. Calculate the gain $\frac{v_o}{v_i}$ when the switch is in position 1, position 2, and position 3.

The gain $\frac{v_o}{v_i}$ at the position 1 is .

The gain $\frac{v_o}{v_i}$ at the position 2 is .

The gain $\frac{v_o}{v_i}$ at the position 3 is .