

**Chapter 5, Solution 3.**

Determine the output voltage when  $20\ \mu\text{V}$  is applied to the inverting terminal of an op amp and  $+30\ \mu\text{V}$  to its noninverting terminal. Assume that the op amp has an open-loop gain of 200,000.

**Solution**

$$\begin{aligned} v_0 &= A v_d = A(v_2 - v_1) \\ &= 2 \times 10^5 (30 + 20) \times 10^{-6} = \mathbf{10V} \end{aligned}$$