Selected Answers to HW #2
[Answers to Probs. 4 and 5 revised 9/13/24; revisions are in boldface]

Remember to explain all answers in your solutions. You will not receive credit for merely repeating an answer given here. If an answer is not given below, it is either because the solution is trivial or because disclosure of the answer would reveal too much of the solution to the problem.

It is possible that one or more of the answers given below is incorrect. There is a trade-off between speed and accuracy. The faster that selected answers are posted to the web site, the more likely that a mistake could have been made in the rush to prepare them. You should develop the ability to evaluate the accuracy of any information that you rely on. If you suspect that an answer below is incorrect, please let me know as soon as possible.

1.   intermediate result: $v_0 = -30(v_1 + v_2 + v_3)$ when summing amp is operating linearly
     $t_{\lim} = 10$ s; $v_o(t_{\lim}) = -3.75$ V; $v(t \to \infty) = -11$ mV

2. $v(t \to \infty) = -100$ mV

3. $V_m < 240$ mV

4.   a. $v_{Id} = 560$ mV; $v_o = 8.4$ V
     b. $v_o = 8.4$ V
     $v_n = 1.2$ V; $v_p = 1.2$ **V** (explain why)

5.   [v_o not given]; $\boldsymbol{v_p} = -225$ mV; $\boldsymbol{v_n} = 12.5$ mV