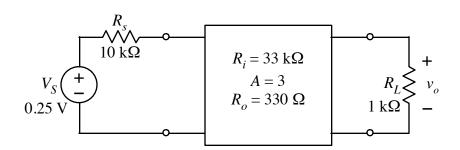
An amp with the two-port model parameters given shown at right used to amplify a signal from source with a 10- $k\Omega$ source resistance and apply it a load of 1 $k\Omega$.



a. Calculate the voltage gain, v_o/V_S for the single stage amp: $A_{T1} =$

b. What is the gain if two stages of the same amp are used? $A_{T2} =$

c. Three stages? $A_{T3} =$

d. Four stages? $A_{T4} =$

e. N stages? $A_{TN} =$

(Find an expression for the gain in terms of R_s , R_L , R_i , A, R_o , and N.