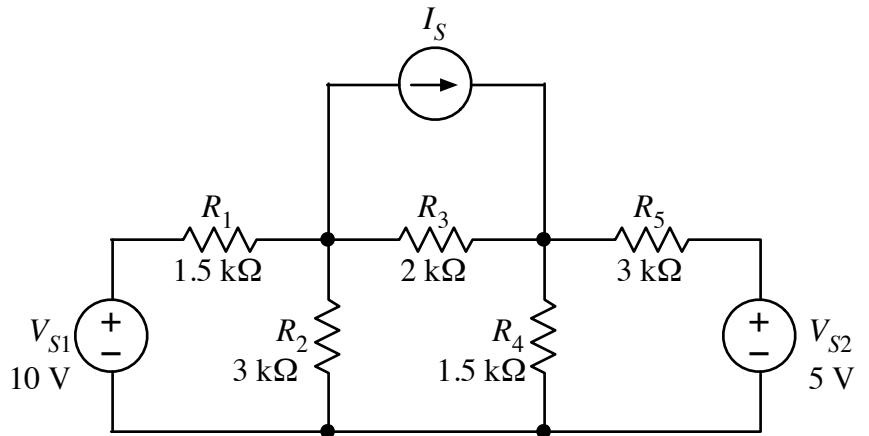


Use the method of superposition to find the value of  $I_S$  that makes the voltage across  $R_3$  equal to zero. (Same as the current through  $R_3$  being zero.)



$I_S =$  \_\_\_\_\_

Suggestion: Find the contributions of  $V_{S1}$  and  $V_{S2}$  to  $v_{R3}$ . Then find an expression for the contribution of  $I_S$  to  $v_{R3}$ . Use that to calculate the value of  $I_S$  that will offset the effects of  $V_{S1}$  and  $V_{S2}$ .