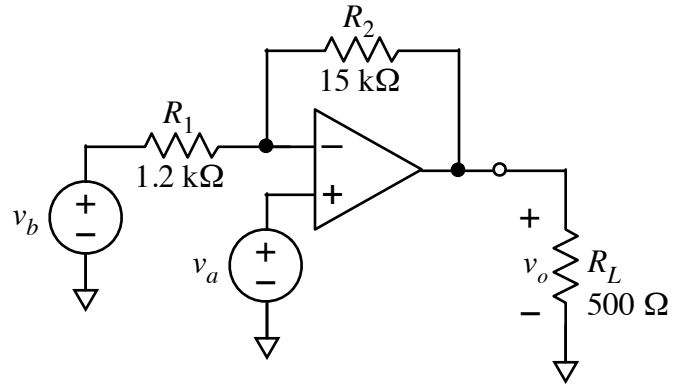


The op amp in the circuit at right is ideal.



- a. Calculate the expression for the output voltage as a function of the two input voltages,  $v_a$  and  $v_b$

$v_o =$  \_\_\_\_\_

- b. If  $v_a = 1$  V and  $v_b = 0.33$  V, what is the value of the output?  $v_o =$  \_\_\_\_\_

- c. What is the output if  $v_a = 1$  V and  $v_b = 0.33$  V and  $R_L = 2$  kΩ?  $v_o =$  \_\_\_\_\_

- d. What is the output if  $v_a = 1$  V and  $v_b = 0.33$  V and  $R_L = 125$  Ω?  $v_o =$  \_\_\_\_\_

- e. if  $v_a = 1$  V and  $v_b = 1.33$  V and  $R_L = 500$  Ω, what is the total power being delivered by the input voltage sources and what is the power being delivered to the load? How do you account for the difference?

$P_{v_a} + P_{v_b} =$  \_\_\_\_\_;  $P_{R_L} =$  \_\_\_\_\_