SOME STUDENTS WILL BE MORE ORGANIZED THAN THIS, SOME LESS!!

EXAMPLE LAB NOTEBOOK ENTRY FOR EXPERIMENT #1

EXPERIMENT #1 — 27 AUG 2009

PURPOSE: TO LEARN HOW TO CONVERT BETWEEN TWO DC VOLTAGE LEVELS USING A RESISTOR DIVIDER NETWORK AND A VOLTAGE REGULATOR, AND TO BECOME FAMILIAR WITH SOURCES, RESISTORS, BREADBOARDS, AND MULTIMETERS.

CIRCUITS — SET SOURCE TO 7V. CONVERT TO 5V OUTPUT VOLTAGE.

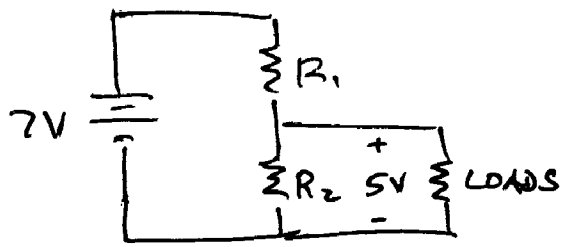


FIG 1
RESISTOR DIVIDER

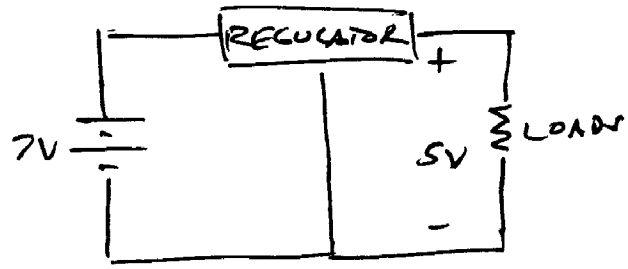


FIG 2
REGULATOR

CALCULATIONS — TO ACHIEVE 5V OUTPUT WITH 25mA TOTAL CIRCUIT CURRENT.

DESIGN VALUES OF R_1 & R_2 =

SHOW YOUR CALCS RIGHT HERE!!

MEASUREMENTS

RESISTORS

	NOMINAL VALUE (Ω)	ACTUAL VALUE (Ω)
R_1	MEASUREMENT	
R_2		

— USE THE BREADBOARD

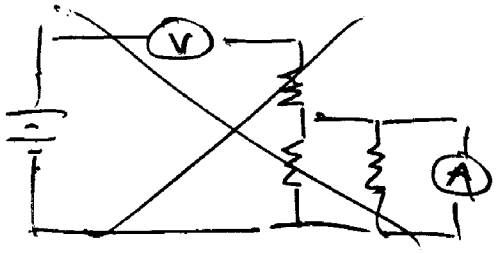
BUILD CKT IN FIG 1

— MEASURE OUTPUT VOLTAGE USING ONE MULTIMETER (ENTER RESULTS IN TABLE)

ADD 5kΩ LOAD RESISTORS AND ENTER RESULTS

— MEASURE CIRCUIT CURRENT USING A SECOND MULTIMETER

PLACEMENT OF MULTIMER:



IF YOU MAKE A MISTAKE CROSS IT OUT — DON'T ERASE!!

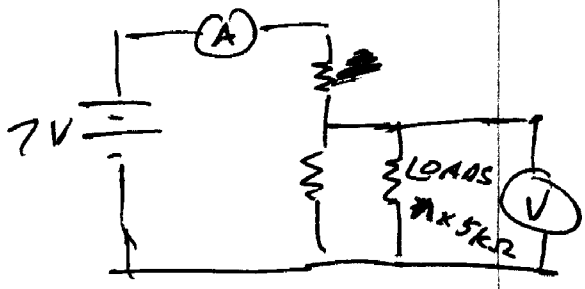


FIG 3

BULD FIG2 — TAKE SAME MEASUREMENTS WHILE ADDING 5kΩ LOAD RESISTOLS

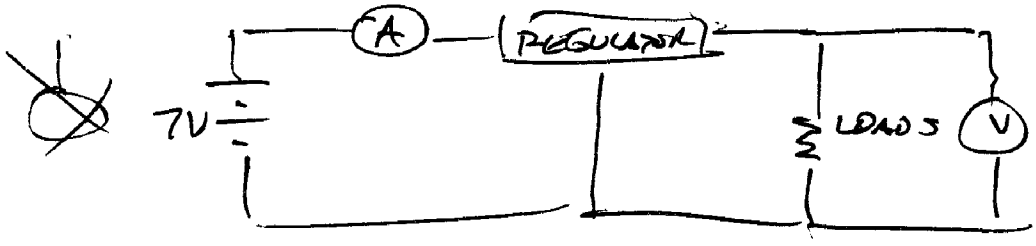


FIG 4

REGULATOR PINOUT DIAGRAM (FROM WEBSITE)

SHOULD REFERENCE THIS

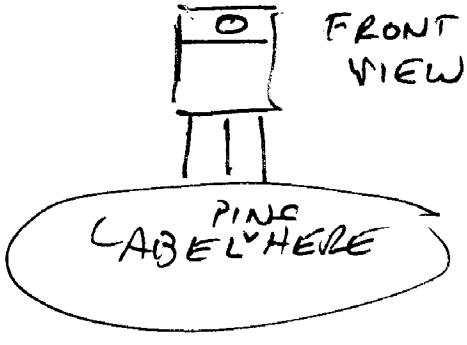


TABLE 1 – ~~OUTPUT~~ OUTPUT VOLTAGE, CIRCUIT CURRENT, ~~RTOT~~ R_{OUT} AS LOAD INCREASES FOR FIG 1 & FIG 2

LOAD RESISTORS	OUTPUT VOLTAGE

5 kΩ LOAD RESISTORS	VOLTAGE DIV (FIG 1) OUTPUT VOLTAGE (V)	CKT CURRENT (mA)	R_{TOT} (Ω)	REGULATOR FIG (2) OUTPUT VOLTAGE (V)	CKT CURRENT (mA)	R_{TOT} (Ω)
0						
1						
2						
3						
4						

FOLLOW-UP AND CONCLUSIONS

1) } PLOTS GO HERE
2)

3) MEASURE R_{OUT} FOR EACH DATA POINT. RESULTS SHOWN IN TABLE.

4) ~~THE~~ YOUR ANSWER TO THIS QUESTION IS THE REAL CONCLUSION (FOR THIS LAB, AT LEAST.)