

# Test Project

*33 Automobile Technology*

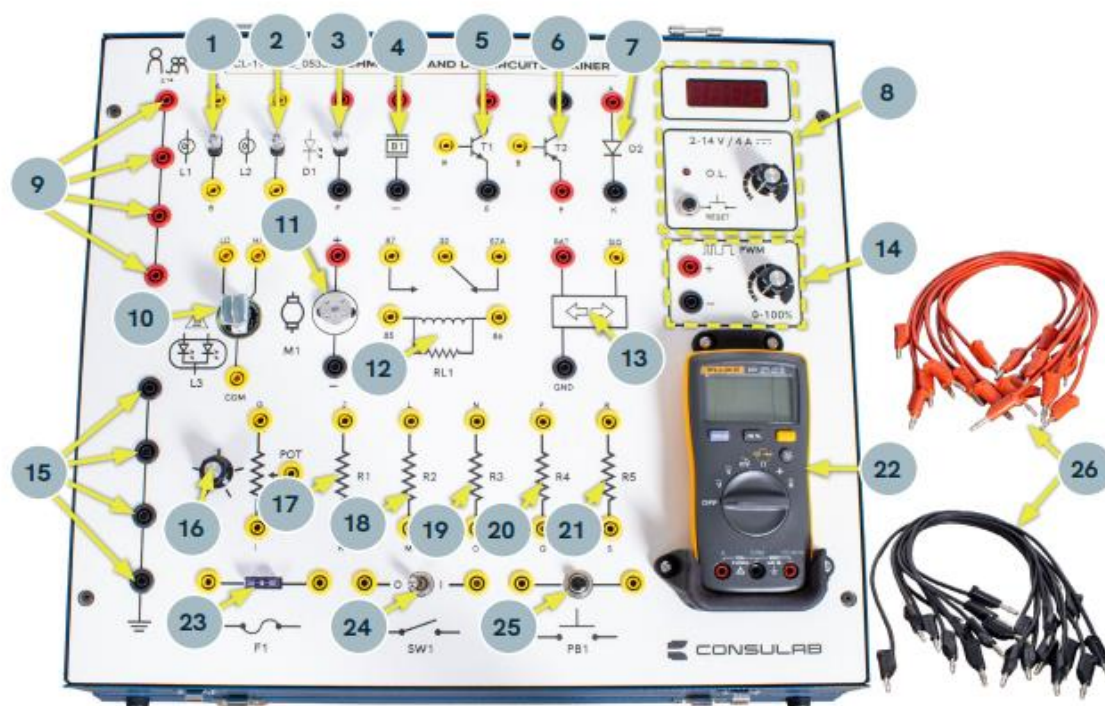
*Module H – Electrical Creation – Report Sheet*

Submitted by:

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# Competitor Report Sheet

Task H1 - Check good function of unit:

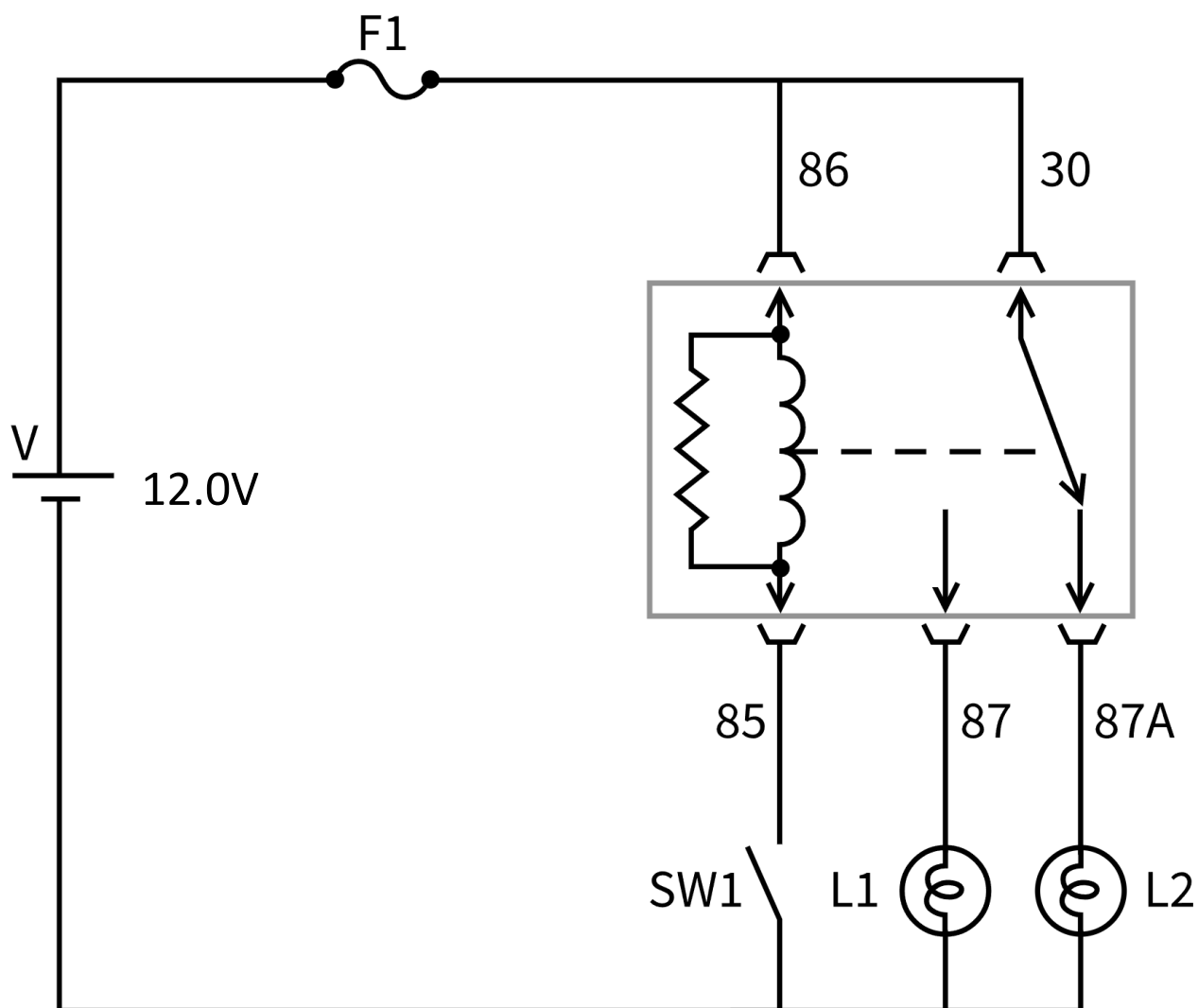


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## Task H2

Step 1 – Build this and show Experts:



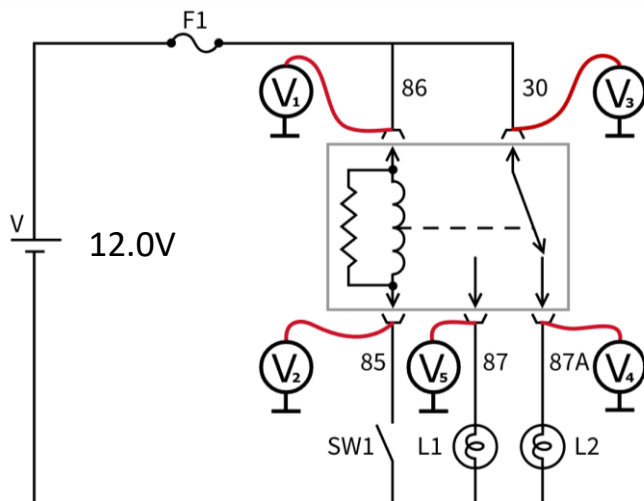
## Step 2



Circle your observations for the following:

SW1	L1		L2	
	ON	OFF	ON	OFF
	ON	OFF	ON	OFF

## Step 3

Perform the following measurements and record the results in the table:



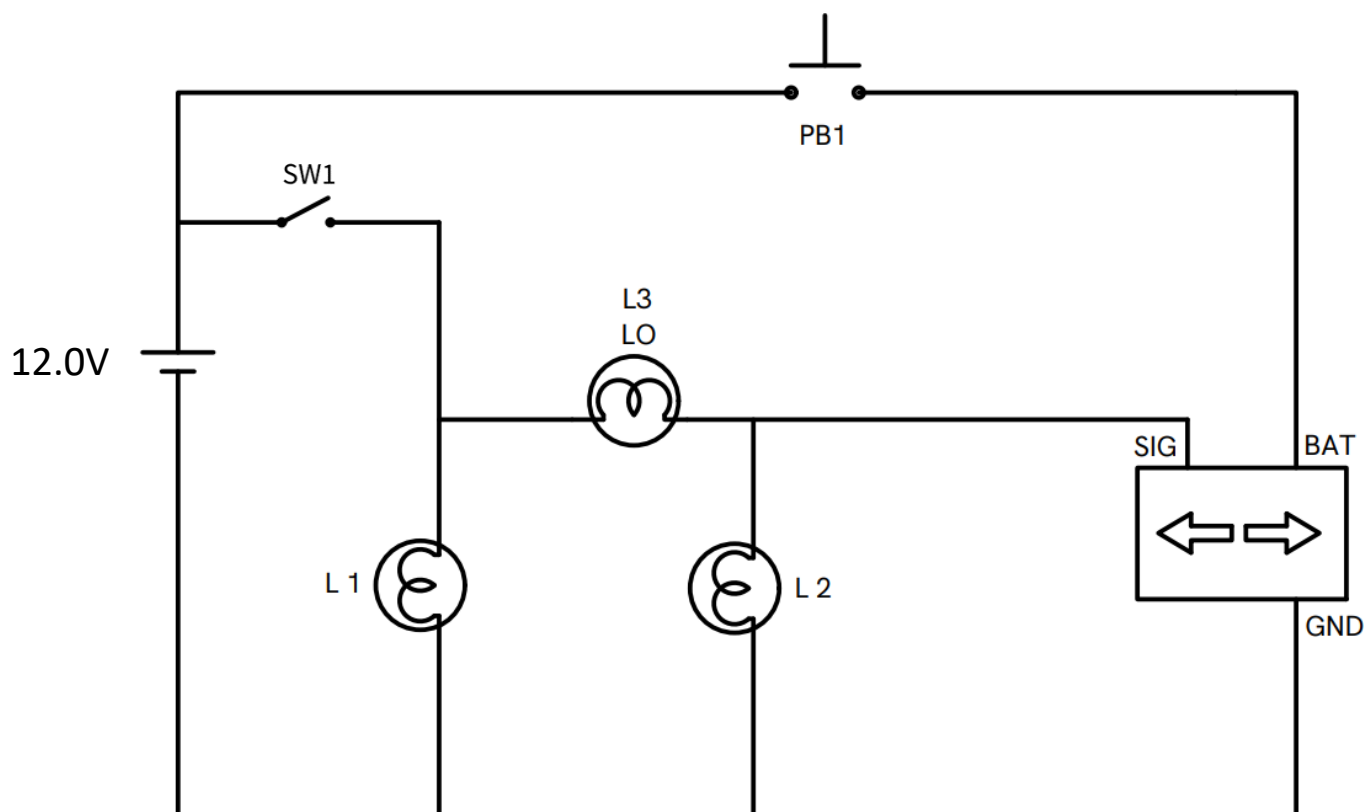
		
V1		
V2		
V3		
V4		
V5		

## Step 4

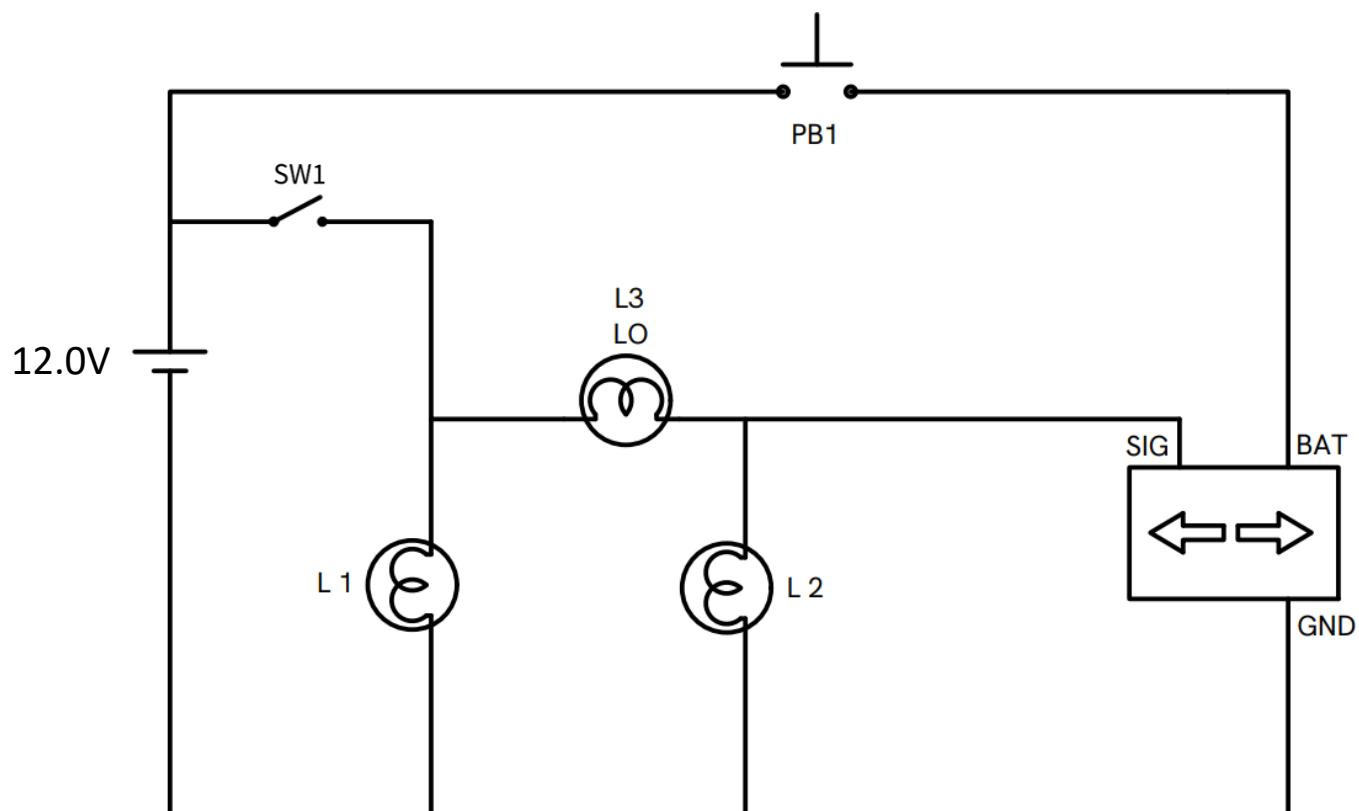
What is the minimum number of watts required to activate the relay coil? \_\_\_\_\_

## Task H3

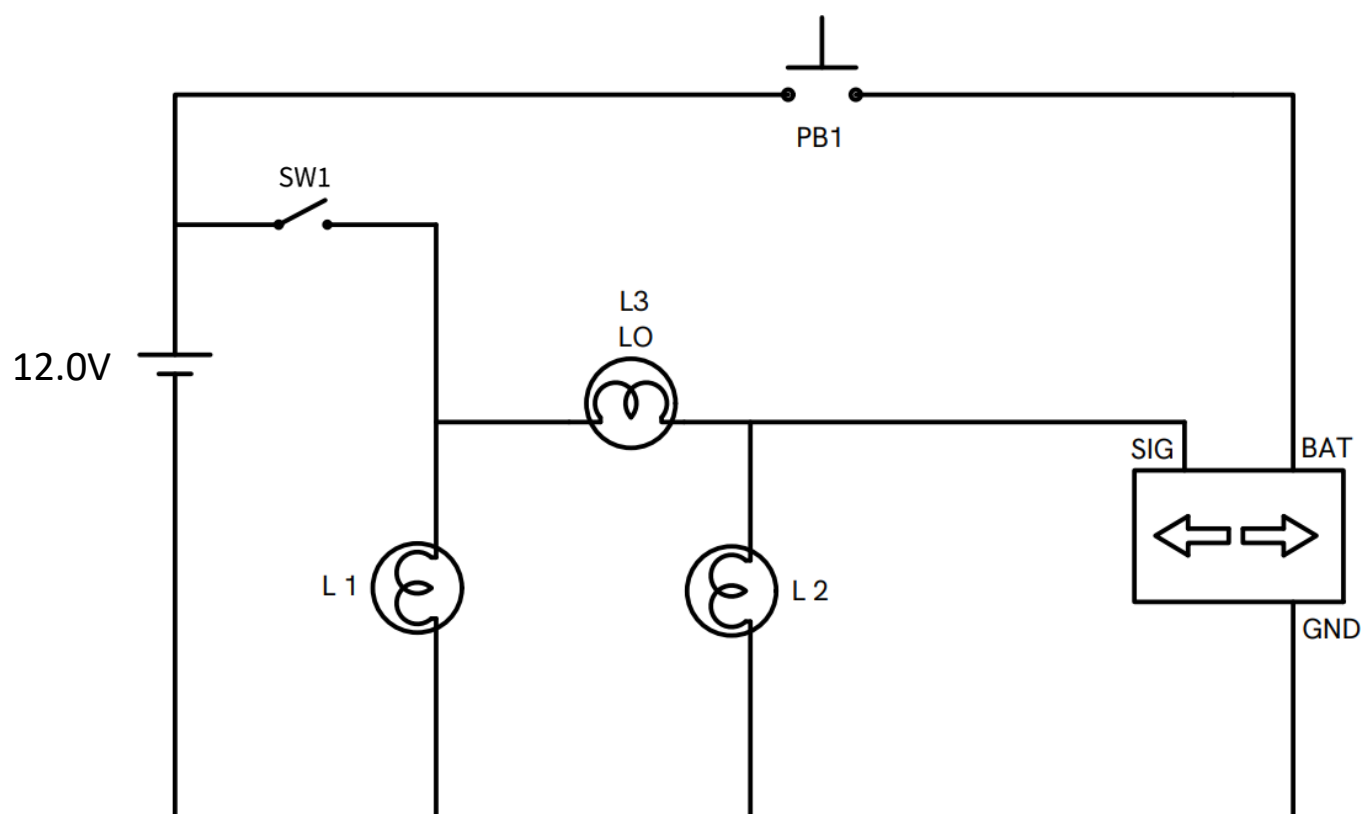
3.1 Build the following circuit and show Experts




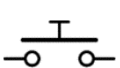

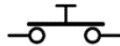

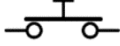


3.2 With SW1 and PB1 ON, circle the part of the circuit that causes L2 and L3 to alternate.



3.3 With SW1 OFF and PB1 ON, circle the part of the circuit that causes L2 and L3 to flash in unison.



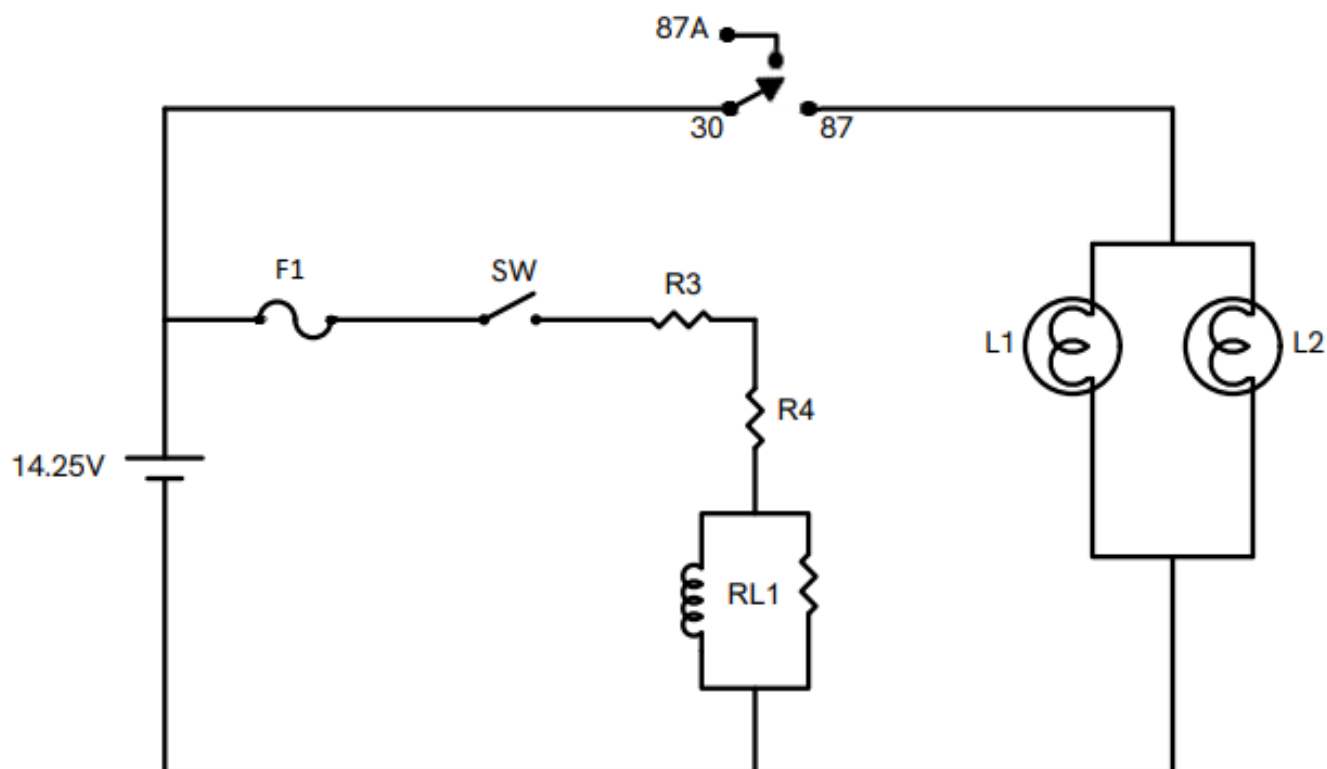
What are L1, L2, and L3 status based on SW1 and PB1 states?

SW1	PB1	L1	L2	L3
ON 		ON / OFF / flashing	ON / OFF / flashing	ON / OFF / flashing
OFF 		ON / OFF / flashing	ON / OFF / flashing	ON / OFF / flashing
ON 		ON / OFF / flashing	ON / OFF / flashing	ON / OFF / flashing
OFF 		ON / OFF / flashing	ON / OFF / flashing	ON / OFF / flashing



## Task H4

Build this and show Experts:

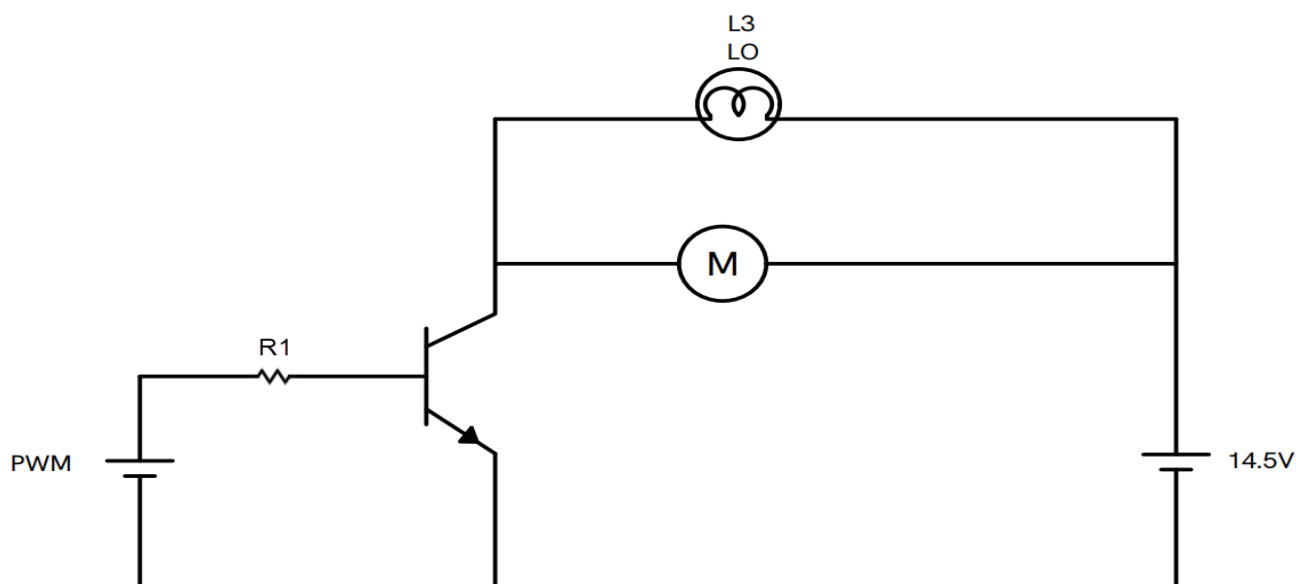


What is the total circuit power consumption with SW1 ON ?

\_\_\_\_\_

## Task H5

Use Pulse width modulation NPN transistor, then to motor and bulb. Build a PWM driven transistor switched power circuit like PCM then show Experts once it's done.



Measure the frequency at approximately 25%, 50% and 75% duty cycle:

25%	50%	75%

Measure the voltage at the devices at 25%, 50% and 75% duty cycle:

25%	50%	75%

What happens to the devices at 25%, 50% and 75% duty cycle:

25%	50%	75%

What is the motor wattage when motor is stalled at 10 Volts?

\_\_\_\_\_

What voltage is needed to trigger the base of the transistor?

\_\_\_\_\_

## Task H6

Using resistors R1 through R5, build a circuit to the value of (Expert specified value) ohms and show Experts.

## Task H7

Create a circuit in which L1 and L2 flash alternately and continuously once the circuit is powered up and show Experts.

