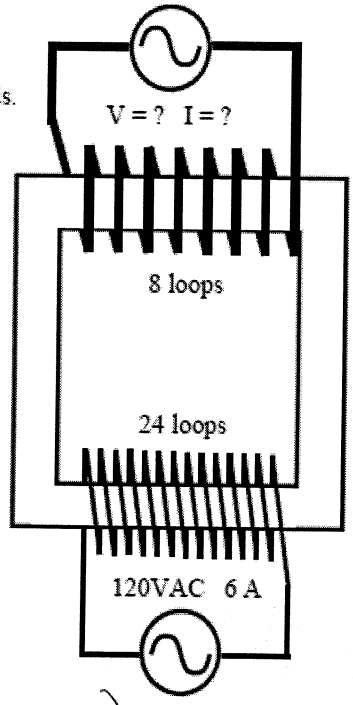
1. A. The side where the original voltage is input is called the: Primary.

   B. The output side of the transformer is called the: Secondary.

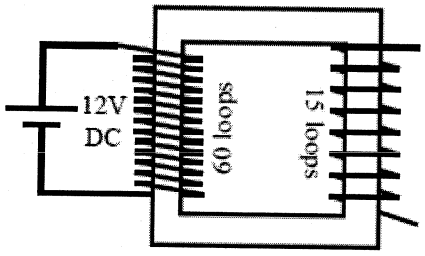
2. Side with more or less coils?
   A. M Has more voltage.
   B. L Has more current.
   C. Both Has more power.
   D. M Has thinner wires?

3. Step-up or Step-down transformer?
   A. D Produces less voltage.
   B. U Produces more current.
   C. None Uses DC current.
   D. Both Works by changing magnetic fields.



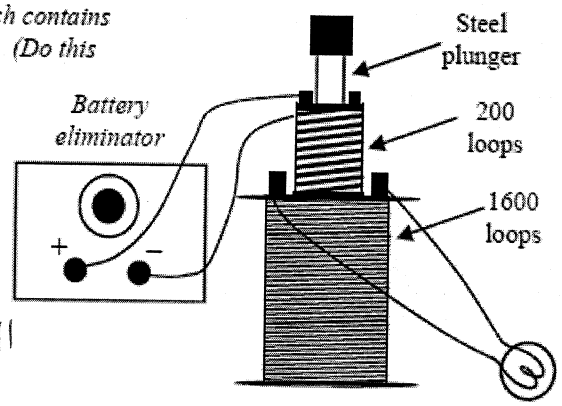
4. Top or bottom of the transformer at the right?
   A. B Is the primary for a step-down transformer.
   B. B Has more voltage.
   C. Same Has the most changing magnetic field.
   D. Same Has less power.
   E. T Is the secondary for a step-down transformer.
   F. B Has less current.
   G. T Is the primary if it is a step-up transformer.

5. 120 volts AC and 6 amps is put into the bottom of the transformer at the right.
   A) Calculate the secondary voltage.
   $\frac{V_P}{V_S} = \frac{N_P}{N_S}$ $\frac{120V}{V_S} = \frac{24}{8} = \frac{3}{1}$ $V_S = \frac{120V}{3} = 40$ volts
   B) What is the output power?
   Same as Input $P = VI = 120V \cdot 6A = 720$ Watts
   C) Calculate the output current.
   $P = VI$ $I = \frac{P}{V} = \frac{720W}{40V} = 18$ Amps (V goes down, I goes up)



6. In the transformer at the left, current with 8 amps and 12V DC is applied into the left side.
   A. Calculate the input power.
   $P = VI = 12V \cdot 8A = 96W$
   B. Calculate the output voltage.
   0V (can't work w/ DC Voltage
   C. What is physically wrong with the diagram?
   Right side should have thicker wires to accomodate more current.

The picture at the right shows a vertical transformer. The plunger (which contains iron) fits inside the inner windings, which fits inside the outer windings. (Do this in the lab, if possible.)



7. A. Is there any wire's connecting the inside and out coils? No
   B. Without the steel plunger, the inner coil is placed inside the outer coil. DC voltage is applied to the inner coil. What happens to the light? Nothing. Will not work w/ DC Voltage.
   C. The plunger is then inserted. What happens? Nothing, still
   D. The plunger is removed and AC voltage is then applied to the inner coil. What happens to the light?
   the light is still on, or very dim.
   E. The plunger is reinserted. What happens? Light gets very bright (Core amplifies the magnetic flux)
   F. Calculation: If 12VAC comes out of the battery eliminator, how much voltage is provided to the light bulb?
   $\frac{V_P}{V_S} = \frac{N_P}{N_S}$ $\frac{12V}{V_S} = \frac{200 Loops}{1600 Loops} = \frac{1}{8}$ $V_S = 8 \cdot 12V = 96$ volts
   $I = 1/8$ Amps