

5. **C: Use a pencil!** Draw a step-up transformer. Draw arrows to show the direction of the current.
6. **C:** Circle the correct choices in italic font: The power in a step-down transformer *decreases/increases/stays the same*. The number of secondary loops in a step-down transformer is *less/more* than the number of primary loops. A step-down transformer *decreases/increases* the current while *decreasing/increasing* the voltage through a wire. The frequency of the secondary coil in a step-down transformer is *less than/greater than/equal to* the frequency of the primary coil.
7. **C: Use a pencil!** Draw a step-down transformer. Draw arrows to show the direction of the current.
8. **C:** State the equation for a transformer which relates the primary voltage to the secondary voltage, the primary current to the secondary current, and the primary number of loops to the secondary number of loops.
9. **E:** The voltage from a step up transformer to a step down transformer decreases from 120 V to 6 V. The number of loops in the primary transformer is 1,000. Calculate the number of loops in the secondary transformer.

10.C: Describe the following effects in a non-ideal transformer:

- a. Flux leakage:

- b. Joule heating:

- c. Eddy currents:

- d. Magnetic hysteresis:

11.C: Where are you most likely to find a step-up transformer? Why?

12.C: Where are you most likely to find a step-down transformer? Why?

13.C: Why is the voltage through a wire from the power plant to a neighborhood so high?