



3. In the circuit shown above,  $X$ ,  $Y$ , and  $Z$  represent three light bulbs, each rated at 60 watts, 120 volts. Assume that the resistances of the bulbs are constant and do not depend on the current.
- What is the resistance of each bulb?
  - What is the equivalent resistance of the three light bulbs when arranged as shown?
  - What is the total power dissipation of this combination when connected to a 120-volt source as shown?
  - What is the current in bulb  $X$ ?
  - What is the potential difference across bulb  $X$ ?
  - What is the potential difference across bulb  $Z$ ?