Semiconductor Introduction Self-Check
Mostly True or False (and to discuss!)

1. Because it is a semiconductor, a piece of normal or pure silicon will conduct about half as much electricity as a piece of aluminum of the same dimensions.
   no, it is orders of magnitude less conductive.
2. N-doped or N-type silicon is so named because its net volume charge (for example, coulombs per cubic meter) is negative. false, there is no net charge
3. When N-type and P-type silicon are put adjacent to each other, electrons tend to migrate from one to the other. true, until they create a boundary that stops further migration
4. N-type, normal, and P-type form a sequence of highest to lowest conductivity.
   no, p type and n type are about as conductive (with the same concentration of dopant)
5. N-type, normal, and P-type form a sequence of highest to lowest resistivity.
   no, see above
6. When N-type and P-type silicon are put adjacent to each other, a region of high conductivity forms at their junction.
   no, a region of no conductivity forms at their junction
7. When N-type and P-type silicon are put adjacent to each other, the N-type becomes negative and the P-type becomes positive.
   no, the electrons that give the n-type it's name leave, so the n-type becomes positive.
8. If an N-type dopant is implanted in P-type silicon, the resulting material could behave like P-type, normal, or N-type, dependent on the concentrations of the dopants.
   probably, because part of the mix will cancel eachother out.
9. A diode is "forward biased" if the N-type region is connected to the negative terminal of a battery, and the P-type is connected to the positive terminal.
   yes, N-type should be connected to the negative part.
10. If a voltage of about 0.1 V is applied to a diode and you cannot measure any current, the diode must be reverse biased.
    no, maybe go up to 0.7 volts and then try.
11. Sketch a graph of the current vs. voltage for a forward-biased diode.