**Typical mistakes in homework 1#:**

There were several typical mistakes in homework 1#, and this document for you is to make sure you won’t make the same mistake next time.

*For the whole homework,*

1. Some of the problems need you to tell the direction of the current. You need to calculate the current first, and then find out the direction according to the sign of the current. DO NOT give out the final result without calculation.
2. Don’t write the process of a problem too simply. Please write out both the algebraic and numerical expressions. Though it is only advice, it is strongly suggested to be done. If you don’t include both expressions, you will probably lose a lot of credits once your solution is not correct.
3. Be careful about the units. Units should appear in circuit diagrams, plot axes, solutions and intermediate solutions. Wrong units and missing units cause a great reduction of credits.
4. The subscript should contain two terms. Invalid subscripts cause a significant reduction in credit.
5. When you can’t work out a problem, show what you have thought and attempted in your homework. Try your best before you give up. It will help you gain lots of credit.
6. Wrong format of the homework. Follow the rules, otherwise credit will be reduced.

*For each problem,*

1. b) and c) Don’t give out solutions without calculation.

d) Few of you make a mistake in the sign.

f) Wrong units. 1.58[J]=0.0158[mJ]=15.8[μJ]

g) Energy w=.

Some of you calculate as i=, and then p=u.

This is a huge mistake in concept. First, energy is quite different from power. Second, when you integrate the current along the time axe, you get charge amount. It is not right to treat it as a total current.

1. b) Don’t make approximation in the mid of your calculation, unless you know exactly what accuracy you need. Improper approximation brings large error.
2. d) The same as 1.g)
3. b) The same as 1.g)
4. a) Few of you made a numerical mistake in current. The first part of is , instead of 8[mA]. Apparently in the first period time, not a constant.
5. and b), wrong units. [mA]=[μW], [μW][S]=[μJ]
6. a) Several of you made a concept mistake. You can’t add the power of different period of time together. It is nothing!
7. a) Units error. The unit should be[mW] instead of [W]
8. a) and b) Don’t use Kirchhoff’s law, as demanded.
9. Few of you have a sign error.