For EVERY problem, tell me EVERYTHING that you have learned about it.
No name, no points. You have 60 minutes. May the force be with you.

Premises
   1) Disco sucks.

This is a categorical statement.
It has two categories, disco music and things that suck.
It is a universal affirmative.
On the “Square of opposition” it is in the “A” position.
It is contrary to the “E” version of the categories, which would be, “No disco music is a thing that sucks.”
“Contrary” means that the “A” statement and the “E” statement cannot both be true, but they can both be false.
We can immediately infer this relationship.
“All disco is stuff that sucks” and “No disco is stuff that sucks” can both be false if SOME disco sucks and SOME does not suck.
As an “A” statement, it contradicts the “O” version of the statement, which would be, “Some disco does not suck.”
“Contradiction” means that if one thing is true, the other MUST be false.
This is another immediate inference (conclusion) we can draw.
The diagram below demonstrates this quite nicely. If all disco sucks, then “no disco sucks” has to be false, and vice-verse.
We can OBVERT this statement.
Obversion gives us a different yet logically equivalent way of expressing the original statement.
The obversion of this statement would be, “No disco is a thing that non-sucks.” It makes more sense if you say, “No disco music is music which is non-sucky.”
We use “non-sucky” rather than “is good” or “is enjoyable” etc. because something can be non-sucky and still not be good: it could be neutral.

2) Some iguanas wearing pajamas aren’t international spies with diaper rash.
This too is categorical. The categories are “Iguanas wearing pajamas” and “international spies with diaper rash.”
It is a particular negative, or “O” statement.
“O” statements are sub-contrary to “E” statements.
The “E” version of this statement would be, “Some iguanas wearing pajamas are international spies with diaper rash.”
Sub-contrary means that both statements CAN be true at the same time, but they cannot both be false.
The “O” statement contradicts the “A” version, “All iguanas wearing pajamas are international spies with diaper rash. (see #1 above for contradiction explanation).

3a) “There’s no such thing as magic!”
This is tricky because it is hard to pick out the categories.
The two categories appear to be, “no thing in the universe” or just, “Nothing” and “is a magical thing.”
This is an “E” statement, in that it is universal and it is negative.
The “E” is contrary to the “A” (see #1) and the “E” contradicts the “I” version of this statement (again, see #1).

Arguments: evaluate them!
3b) Every male member of congress is tainted with the stench of having cheated on their wives. None of that taint can be removed. Thus, every male member of congress has taint.

This is disguised as a categorical syllogism. There are two premises, one conclusion and three categories (male members of congress, things tainted, and things which can be removed). Each category is not mentioned twice, however. “Things which can be removed” is only mentioned one time, so I know that this is not going to be valid or “deductively entailed”.
Deductive entailment means that it is impossible for the conclusion to be false IF all of the premises are true. It appears that this condition is met, because the first premise says that all of the male members of congress are tainted, and if that is true,
then the conclusion (that all male members of congress have the taint) MUST be true.
BUT there is a problem: the conclusion is simply a re-statement of the premise. Essentially, the person making the argument ASSUMES that their first premise is true, does not back it up with any proof, then re-states it as her conclusion. This is a FALACY OF REASONING called “BEGGING THE QUESTION”. The person asserting a conclusion has the burden of producing evidence to back up their claim. They cannot simply re-state the same idea twice.

Use a VENN DIAGRAM on PROBLEM #4
4) In order to be a useful computing device, a computer must have a built-in video camera. The new iPad does not have a built in camera. Thus, the new iPad is not a useful computing device.

Three categories: Useful computing devices, things with built-in cameras and the iPad. The middle term is the term that is mentioned in both of the premises but does not appear in the conclusion. Here, that would be the term “things with built in cameras”. That term needs to be distributed, which it IS, even though it does not look like it at first glance. “Distributed” means that we know at least ONE thing about EVERY member of the category. The second premise says that NO iPADS have built in cameras. We know from that statement that EVERY item in the universe which has a camera built into it is a NON-iPAD. A diagram of that premise is just like the one in 3A above. When I draw a Venn of it, we get the below outcome, which shows that it is impossible for the conclusion to be false if the premises are in fact true. We do not, when evaluating the logic, question the factual validity: we assume that they are true, just for purposes of the logic. The only iPads left are the ones that are not useful computing devices.

ONLY tell me what is deductively entailed from #5, NOTHING ELSE.
5) All of the executives at Goldman-Sachs have committed huge financial frauds against the American people. Financial fraud in an ordinary sense is just a crime: cooking the books at work to cover up embezzlement is an example. Financial fraud against the American public is treasonous: it carries the severe risk of bringing the
United States under the influence of outside nations. Treason is a capital offense, i.e. those who commit it should be hanged.

INFERENCE: Goldman-Sachs executives should be hanged.

BONUS: WHAT IS THE MISSING PREMISE IN THIS ARGUMENT:
All electric lawnmowers have lower CO2 emissions than any of the gas mowers, so electric lawn mowers are better for the environment than gas mowers.

The conclusion states that electric lawn mowers are better for the environment than gas mowers. We have a premise about the electric mowers, and also the gas mowers. We have no premises at all about what is better for the environment...NADA! What we do have is a premise that talks about CO2, but there is nothing in the conclusion about lower CO2 emissions, so it seems that the arguer is assuming that there is a connection between lower CO2 emissions and being better for the environment. So the missing premise or “assumption” would be:

Things with lower CO2 emissions are better for the environment.