Indiscernibility and Identity Distinguish these. "Leibniz's Law" used confusingly for implication in either direction: *indiscernibility of identicals* and *identity of indiscernibles*. Consider these in turn.

Indiscernibility of Identicals: if x = y, then x has property P iff *y* too has P.

This strikes some as obviously right, others as obviously wrong. Why obviously right? If x and y are identical, then they're one and the same thing; x's properties are *its* properties and its properties are y's properties. By transitivity of "same properties as," x's properties are y's properties. Contrapositively, if x and y differed in their properties, then *it* would have different properties than itself. So for some P, x would be P and yet also not-P. Contradiction!

Why obviously wrong? You might think it's not at all absurd for x to be P and also not-P. A banana is both skinny (at the ends) and fat (in the middle). You might say that's just loose talk: the banana has skinny parts and fat parts, that's all. But there's also temporal variation. The banana is green (at the beginning) and yellow (in the middle) and brown (at the end). Is this a counterexample to indiscernibility of identicals? Several ways out:

Temporal parts: b-at-t is green, b-at-t'-is brown, b-at-t ≠ b-at-t'.
Tensed predicates: b is green-at-t, b is brown-at-t'.
Tensed predication: b is-at-t green, b is-at-t' brown.

Some problem cases; what to say?

(i) The US = Alabama, Alaska, etc. The US is one thing. Alabama, Alaska, etc. are NOT one thing but many. (Not *identity*, rather composition.)

(ii) Oedipus's mom = Jocasta. Oedipus wants to marry Jocasta. He doesn't want to marry his mom. (Not a difference in *properties*. It isn't a property of x that Oedipus wants to marry it; otherwise we could ask, does Jocasta, aka his mother, have the property? He wants to marry x in one guise but not another.)

(iii) The Athens-Thebes road is uphill; the Thebes-Athens road is downhill. (Not a *difference* in properties; the one road is uphill travelled one way and downhill travelled another.)

(iv) Salt = sodium dichloride. Salt is a condiment, sodium dichloride a chemical. (Not a *difference* in properties; salt is also a chemical, even if 'salt' isn't the chemical term.)

Identity of Indiscernibles If x and y have the same properties, then x=y.

Again some find this obviously right, others find it obviously wrong. Why obviously right? If x and y have the same properties, then they have in particular the same identity-properties. But x has the property of being identical to x; so y has that property too; so y is x. Fair enough, but identity-properties are a cheat in this context. The principle is trivialized.

Suppose we limit ourselves to properties that characterize a thing (suchnesses?), eschewing ones that explicitly identify it. Now the principle may seem right for a different reason. If x and y share their qualitative properties, then we can never distinguish them. If we can never distinguish them, then "$x \neq y$" can never be verified. If it can never be verified, it can never be true. Discuss.

If qualitative properties include relational or extrinsic properties, the principle may well be accidentally true. The real issue is whether it *has* to be true. Is there even the possibility of indiscernibles that are nonetheless distinct? Try some examples. Castor/Pollux. Symmetrical universes. Eternal return. These make a good prima facie case against the principle's necessity.

Difference in spatial properties? Yes, if you believe in absolute space. But if you believe in absolute space, then points in that space look like distinct indiscernibles. Relational view of space. Leibniz/Clarke debate. Places as possibilities of location.

Question, though: what distinguishes a world with two indiscernible spheres in Euclidean space from a world with one sphere in the right kind of non-Euclidean space, e.g., Riemannian surface of a sphere world? What distinguishes a world of eternal return from a finite world where everything is assigned multiple dates: t, t + C, t - C, t+2C, t-2C, etc.?

Adams's clever response. It's certainly possible for there to be two very *similar* spheres in Euclidean space. Imagine that one sphere has one more atom. Surely it could have have had one atom less! That would bring it into alignment with the other sphere, let's say. The objector has to say that when it loses the atom, the space must suddenly go non-Euclidean so that the two spheres merge into one. Surely though it could have had one atom less without the basic properties of space changing. So identicals are indiscernible, but indiscernibles are not necessarily identical.