There are two parts to the Tradition of Analytic Philosophy:

1) The theory of meaning. We should try to understand the meaning of language, which is not to be substituted for, but to learn about it.

2) The theory of reference: a property that holds between two or more objects, or an object and itself (e.g., being the sister of, loving).

Leibniz's Law: Co-refering terms are indistinguishable without reducing. It's a definite description: a descriptive phrase that can be determined to be true or false only by sense experience.
in the same style, etc., and identical twins.

Numerical identity is a relation between an object and itself - that it shares the same location in space with itself. Examples would be Clark Kent/Superman and a shirt I wore yesterday and the same shirt that I am wearing today.

9. *Frege, Russell*

- Take a dim view of natural language; they see it as being able to be illogical and ambiguous, and as containing non-referring terms.
- Wanted to stop using natural language for math and science, and to use an artificial language instead.

- *Early Wittgenstein*

  - Is more positive towards natural language.
  - Doesn't want to discard natural language for use in math and science.
  - Thinks an artificial language could be useful...
  - But thinks we need to study how natural language has meaning, otherwise any artificial language we create will have many of the same flaws that natural language do.

*Also: "The propositions of logic are logically completely in order just as they are at least in their..."*
Discuss Frege's Puzzle About Identity, his original (1879) solution, and his later (1892) solution.

There was a time when sailors used the phrase "the Morning Star" to refer to the first star to disappear in the morning at a certain time of year and the phrase "the Evening Star" to refer to the last star to come out in the evening at a certain time of year... without realizing that both stars were actually Venus. The discovery that their Morning Star and their Evening Star were both Venus was a major astronomical advance.

To say "the Morning Star = the Evening Star" seems to announce something important... to have cognitive significance. It is an a posteriori statement.

But to say "the Evening Star = the Evening Star" seems to announce something trivial... It is an a priori statement that anyone could see was true, even without any knowledge of astronomy.

Frege's puzzle asks: why? How can it be that "a = a" differs in cognitive significance from "a = b"... given that a does equal b?

In 1879, to answer this puzzle, Frege described two possible meanings for the statement "the Morning Star = the Evening Star". It could either describe a relationship between the object that "the Morning Star" picks out and the object that "the Evening
Star" picks out, or it could describe a relation between the actual words in the phrases themselves. To say that Venus (the object picked out by "Morning Star") is Venus (the object picked out by "Evening Star") is still an a priori statement with no cognitive significance. But to say that the phrase "the Morning Star" is identical in meaning to the phrase "the Evening Star" is not a priori. It has to be discovered and, according to early Frege, has cognitive significance (so, some a different cognitive significance than "Es = Es").

So, Frege said, the puzzle is solved by understanding that a statement like "the Morning Star = the Evening Star" describes a relation between the two expressions, not the object(s) they stand for.

But words can be arbitrarily assigned to name objects. I can say "Rufus = the Morning Star" and "Venus = jiiiijj" and these statements can't be distinguished in (validity) from "the Morning Star" = "the Evening Star" = "Venus". In 1892, Frege realized that his original solution was unsatisfactory.

If "the Morning Star = the Evening Star" simply means that you can say either phrase and still be talking about the same thing, it is meaningless; because you can arbitrarily put in ANY phrase and still be talking about the same thing. The real solution had to recognize that "the Morning Star = the Evening Star" deals not just with words, but with an important astronomical fact.
Frege came up with the sense/reference distinction. Reference is the object that the word or phrase denotes. 

\[
\text{sense} = \begin{cases} 
\text{a definite description that a word or phrase expresses} \\
\text{and is not subjective} \\
\text{picks out something that matches the definite description expressed by the sense} \\
\text{a bit unclear with an expression refers to a determined by the sense it expresses} 
\end{cases}
\]

This can be applied to the puzzle of the morning star and the evening star by saying that their equality is significant when you are saying that their senses are identical, not their references. 

\[
\begin{align*}
\text{phrase} & \quad \text{reference} \\
\text{the Morning Star} & \quad \text{Venus} \\
\text{the first star to disappear in the morning at a certain time of year} & \\
\text{the Evening Star} & \quad \text{Venus} \\
\text{the last star to appear in the evening at a certain time of year} &
\end{align*}
\]

If the phrases' references were being said to be identical, you would be saying nothing more than "Venus = Venus." But if the phrases' senses are being said to be identical, you would be saying that the first star to disappear in the morning at a certain time of year is the last star to appear in the evening at a certain time of year. This statement is of great cognitive significance, and accurately expresses...
the astronomical fact. Frege seems to have solved the puzzle.

Very good answer, despite a bit of uncertainty and at least one important misstep.

\[ -\frac{1}{2} \text{ pt out of } 10 \text{ pt} \]

95% for this question