Comparing word forms, we have the following words:

- eat
- see
- confuse
- chocolate
- dog
- house
- axolotl
- woman
- meat
- ipan in atl
- ipan in tepetl (by analogy with the above)
- ipan in milli (by analogy with the above)
- notah
- ical in oquichtli
- nipantlalia

This leaves us with a few tasks; namely, to determine word order, word formation (morphology), the distribution of 'in,' and a few phrasal components:

Most of the verbs appear to behave similarly with respect to their arguments:

- (I) see (the dog) niquitta
- (I) ride nipantlalia
- (The axolotl) confuses (me) nechixcuepa
- (My father) sees (me) nechitta

In fact, all verbs except itlacual/notlacual appear to have the same prefixes indicating person of the subject and object.

- I he/she/it
- me ??? nech-
- him/her/it niqu- qu-

It is also possible to conceive of an alternative system where the roots of –itta and –ixcuepa are instead –quitta and –quixcuepa, and nech-, niqu-, qu- are instead ne-, ni-, - , with ne- triggering a change ‘qu<ch’. However, in either case, the pronoun 'I' is seen to be ni-, and 'he/she/it' is null.
Now we may account for the simplest types of sentences, 3, 4, and 7, where there is no possession, prepositional phrase, etc. In these sentences, the word order is verb-subject-object, with in before each argument (subject and object) and the verb taking the appropriate prefix(es). This VSO word order with agreement on the verb holds also for 5, 8, and 9, although something more needs to be said in these cases. It appears that ipan signifies ‘in/on’ and takes a noun with in, which fully explains 5 and 8.

Let us turn our attention to 6. We have ipan in tepetl, which presumably means ‘on top of the hill,’ and ical in oquichtli, which must mean ‘the man’s house.’ Note that ical appears similar to ‘house,’ while in oquichtli must mean ‘man’ and appears in its most basic form—even though the word has never appeared before, it is apparent that it ends in –til/tli/lí, unlike the modified ical. We conclude that in possessive phrases, it is the possessed object which changes accordingly, and not the possessor. In this case, the house is possessed and changes ‘calli<ical.’ In 9, it is again the possessed item notah which appears to change in some way.

The key lies in the following realization: the prefix i- in ipan, ical, and the verb itlacual is the same and indicates third person for the possessor or subject (for itlacual). The prefix no- in notah and notlacual is the same and indicates first person possessor or subject. Besides the similarity of the prefixes i- and no-, this is also indicated by the similar suffixes of itlacual and cal (and even pan and tah), in contrast with the other verbs that end in vowels.

Now, consider the sentences in J2, which will allow us to clarify a few of these details. The second sentence confirms two suspicions by showing an example of nopan, which we predict to mean ‘on top of me,’ as well as confirming the lack of a copula (the verb ‘to be’), a phenomenon familiar from 6. The first sentence gives an example of tlaculli, presumably the root for itlacual and notlacual, in the same way that cali is the root for ical (and pantli is the root for pan?). While a student may solve most of the problem without this realization, a correct translation to the first sentence will require an additional observation: tlaculli is in fact a noun meaning ‘food.’ More literally, the given sentences 1 and 2 mean ‘meat is the food of the dog’ and ‘chocolate is my food,’ respectively. It is also possible to account for tlaculli in a different way: tlaculli is a version of -tlacual- which does not have a subject; namely, a passive! In this case, tlaculli would mean ‘is eaten.’ However, this explanation is somewhat less appealing, because we would need to account for the distinct OVS word order in 1 and 2, as well as the distinction between the two types of words.

In fact, English prepositions are rendered in Nahuatl as so-called relational nouns, so that the phrase ‘on top of the mountain’ more literally means ‘the top of the mountain.’ This observation is, however, not necessary for the problem.

J1.

Word order is VSO (verb-subject-object). Verbs are:

- see -itta
- confuse -ixcuepa
- ride -pantlalia
These take prefixes for the persons of their subjects and objects: *qu-* for third person object, *ni-* for first person subject, *nech-* for first person object. We also know that *ni-* appears before *qu-. The bare form of each noun ends in –*tl* after vowels, -*tli* after consonants, and –*li* after –*l*. This bare form always appears with the preposed particle *in*, except sentence-initially (as in 1 and 2). The particle *in* never appears unless the noun is in its bare form. Nouns include:

- meat: *nacatl*
- chocolate: *xocolatl*
- dog: *itzcuintli*
- house: *calli*
- axolotl: *axolotl*
- water: *atl*
- man: *oquichtli*
- hill: *tepeltl*
- woman: *chhuatl*
- field: *milli*
- father: *'tahtli*
- food: *tlacualli*

If the noun is possessed, it drops the suffix –*tl/tli/l* and takes a prefix for the person of its possessor: *i-* for third person, *no-* for first person. Then its possessor follows it. In exactly the same way, prepositions (*pan*, meaning ‘in/on’) agree with their objects, which then follow them.

Pronouns are not realized except as prefixes, and there is no copula ‘to be.’

**J2.**

a. Axolotl tlacualli ipan nocal.

<table>
<thead>
<tr>
<th>I n m y  h o u s e ,  t h e</th>
<th>a x o l o t l l i s f o o d / e a t e n</th>
</tr>
</thead>
</table>

b. Itzcuintli nopan.

<table>
<thead>
<tr>
<th>T h e  d o g  i s  o n  t o p  o f  m e</th>
</tr>
</thead>
</table>

b. My father’s father sees the axolotl.

<table>
<thead>
<tr>
<th>Q u i t t a  i t a h  n o t a h  i n</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>a x o l o t l l</th>
</tr>
</thead>
</table>
Grading:

J1 — 10 points

+5/3 points for word order (partial credit may be assigned)
+10/9 points for null copula
+20/9 points for subject/object prefixes (partial credit may be assigned)
+5/3 points for noticing the similarity between nouns and prepositions
+20/9 points for satisfactorily explaining sentences 1 & 2 (partial credit may be assigned)
+10/9 points for identifying and explaining the noun suffix -li

Maximum of 80/9 points for an incomplete answer

J2 — 5 points

+5/3 points for (a); 5/6 points for “someone eats,” 5/9 points for “we eat,” etc.
+10/9 points for (b).
+20/9 points for (c), even if in is overused; -5/9 points for wrong word order and/or very unreasonable in use, -5/9 points for incorrect agreement on a word (up to -10/9).

Total: 15 points