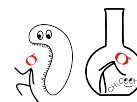




Sigma Tournament



Day 4: Grand Unification



1) The population of the island of Pianosa is 100. Some of the inhabitants always lie, the others always tell the truth. Each islander worships one of three gods: the Sun god, the Moon god, or the Earth god. One day a visiting anthropologist asked each inhabitant the following questions:

1. Do you worship the Sun god?
2. Do you worship the Moon god?
3. Do you worship the Earth god?

There were 60 “yes” answers to the first question, 40 “yes” answers to the second question, and 30 “yes” answers to the third. How many liars live on the island?

2) The motorboat travels downstream from the town A to town B in 3 days and from town B to town A in 4 days. How long will it take for a raft to travel from A to B?

3) Marina noticed that the two pots that she put on different cups of a sensitive balance scale are in equilibrium early in the morning. There is a small plant growing in one of the pots and a big one growing in the other. Will the equilibrium remain by the end of the day? If no, what side will be heavier?

4) Write down the formula for arsenic selenide (periodic table is given).

5) For each of the following English word sequences specify whether they can occur in a grammatical English sentence or not. If the answer is yes, give a sample sentence.

- | | |
|--------------|--------------|
| a) could to | e) he should |
| b) he have | f) on walked |
| c) that that | g) the did |
| d) the John | |