

Homework #1:

Photo:



Section 1.1, Exercises 2, 4, 12:

2. Which of these are propositions, and what are the truth-values for the propositions?

- a) Not a proposition, a command
- b) Not a proposition, a question
- c) Proposition, False
- d) Not a proposition, neither true, nor false
- e) Proposition, False
- f) Not a proposition, neither true, nor false

4. What is the negation of each of these propositions?

- a) It is not the case that Jennifer and Teja are friends.
Jennifer and Teja are not friends.
- b) It is not the case that there are 13 items in a baker's dozen.
A baker's dozen is not 13 items.
- c) It is not the case that Abby sent more than 100 text messages every day.
Abby did not send more than 100 text messages every day.
Abby sent less than 100 text messages every day.
- d) It is not the case that 121 is a perfect square.
121 is not a perfect square.

12. Let p , q , and r be the propositions

p : You have the flu.

q : You miss the final examination.

r : You pass the course.

- a) If you have the flu, then you miss the final examination.
- b) You pass the course if and only if you do not miss the final examination.
- c) If you miss the final examination, you will not pass the course.
- d) Either you have the flu, or you miss the final examination, or you pass the course.
- e) Either you have the flu and you don't pass the course, or you miss the final exam and you don't pass the course.
- f) Either you have the flu and you miss the final exam, or you don't miss the final exam and you pass the course.