

GAME THEORY — PROBLEM SET 5
DUE MARCH 17 AT 14 PM

I will be in E1 and collect your solutions just before the written exam starts, but of course you can put them in my mailbox at the math department or send them to me electronically as long as you do it before 14 pm on March 17.

If you solve all three problems perfectly I am 100 percent impressed! To pass this problem set you will have to make me at least 50 percent impressed.

PROBLEM 1

Let $G = \{ \{7|5\}, \{10 || 5|3\} | \{1|0\} - \{7|0\} \}$.

- (a) Draw the thermograph of G .
- (b) What is the temperature of G ?
- (c) What is the mean value of G ?
- (d) Who will win G ?
- (e) Who will win the game $7G - 20$?

PROBLEM 2

Write the following short games on canonical form:

- (a) $*2$,
- (b) $\{ \{ *|0 \}, 0 || \{ *|0 \} | * \}$.

PROBLEM 3

- (a) Find two different short games $G \neq H$ which have the same thermograph, that is, for any number x and any nonnegative real number t , we have $x \leq G_t \Leftrightarrow x \leq H_t$ and $x \geq G_t \Leftrightarrow x \geq H_t$.
- (b) Discuss (in a few lines) why it is a good thing that our theory makes a difference between G and H though they have the same thermograph.