Exercises for Thursday, second hour

Mathias Winther Madsen,
`mathias.winther@gmail.com`

January 17, 2014

A horse race (Cover and Thomas, Exercise 6.5)

1. You should be summing up terms like $\frac{1}{2}\log\left(\frac{1}{2}\cdot 4\right)$.

2. What bound should the doubling rate exceed for this to make sense?

A prediction game

1. Draw a game tree. Make sure to take care of letter dependencies.

2. What are the free parameters are there in the game tree?

Lotto (Cover and Thomas, Exercise 6.8)

1. What are the "horses" in this game?

2. The "odds" are here a function of the number of people you have to share with.

3. The doubling rate is the slope of a certain line on a graph on a logarithmic scale.

4. If I multiply your gains by a factor of $1/z$, what happens to your doubling rate?