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 $\Sigma$ 

## Übungsblatt Nr. 8

(Abgabetermin 20.12.2017)

### Aufgabe 1

b

Tabelle 1:  $\alpha\beta$ -pruning times on top, Minimax-times below

<b>Stones \ Size</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>
<b>2</b>	38ms	67ms	248ms	444ms	-
	97ms	444ms	-	-	-
<b>3</b>	35ms	387ms	-	-	-
	108ms	-	-	-	-
<b>4</b>	3ms	8ms	209ms	-	-
	2ms	10ms	-	-	-
<b>5</b>			3ms	14ms	688ms
			3ms	22ms	-

Blank combinations are not possible.

Combinations marked with - take above 1s to find.

c

The heuristic is very simple: It returns the average distance of your stones to the other side of the board. In a game where our heuristic is player1, it usually pushes its stones forward together.

Whereas if it is player2, it only pushes its first stone. It only moves the other stones if it has to.

After 25 Games each as player1 and player2 we come to the following statistics:

Tabelle 2: Heuristic is Player1

<b>Depth</b>	<b>Win</b>	<b>Draw</b>	<b>Loss</b>
<b>5</b>	9	11	5
<b>10</b>	7	15	3
<b>15</b>	8	13	4

Tabelle 3: Heuristic is Player2

<b>Depth</b>	<b>Win</b>	<b>Draw</b>	<b>Loss</b>
<b>5</b>	16	0	9
<b>10</b>	11	1	13
<b>15</b>	14	1	10