

# Chapter 17 Homework Solutions

1)

	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	bid lists
B	.2	.4	.4	2 <sup>nd</sup> , 3 <sup>rd</sup>
C	.5	.2	.3	1 <sup>st</sup>
A	1/3	1/3	1/3	all

two possible divisions:

A gets 2 <sup>nd</sup>	or	A gets 3 <sup>rd</sup>
B gets 3 <sup>rd</sup>		B gets 2 <sup>nd</sup>
C gets 1 <sup>st</sup>		C gets 1 <sup>st</sup>

2)

	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	bid lists
B	.5	.2	.3	1 <sup>st</sup>
C	.3	.4	.3	2 <sup>nd</sup>
A	1/3	1/3	1/3	all

only one possible division:

A gets 3 <sup>rd</sup>
B gets 1 <sup>st</sup>
C gets 2 <sup>nd</sup>

3)

	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
B	.5	.2	.3
C	.4	.3	.3
A	1/3	1/3	1/3

two possible divisions

A gets 2 <sup>nd</sup>	or	A gets 3 <sup>rd</sup>
B+C recombine 1 <sup>st</sup> + 3 <sup>rd</sup> do I cut you choose		B+C recombine 1 <sup>st</sup> + 2 <sup>nd</sup> do I cut you choose

4) Each player must identify at least one piece as fair, since if  $S_1$  and  $S_2$  are each worth  $< 1/3$ , then  $S_3 > 1/3$ ; since  $S_1 + S_2 + S_3 = 1$ .  
 $< 2/3$        $> 1/3$

5) Suppose  $S_1 < 1/3$  to both B and C. The portion that remains is  $S_2 + S_3$ . Since  $S_1 + S_2 + S_3 = 1$ , if  $S_1 < 1/3$ , then  $S_2 + S_3 > 2/3$ .

and from Chapter 19, p.141:

1) bids are: A-all B-b,d, C-b,c,d D-b

give b to D
d to B
c to C
a to A

2) bids are: A-all B-b C-b D-abc

one possibility:
give c to D
d to A

3) bids are: A-all B-b,c C-b D-bc

B+C recombine a and b to do I cut you choose
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one possibility: give d to A
B,C+D recombine a,b,c to do Steinhaus