

Chapter 16 homework Solutions (1st day)

2)

	Choc	Van	Str	Wal
B	0	1	0	0
J	x	0	x	0
L	1	0	0	0
C	0	0	x	x

B gets 1

J gets $\frac{60x + 90x}{90x + 90x} = \frac{150x}{180x} = \frac{15}{18} = \frac{5}{6}$

L gets $\frac{1}{3}$

C gets $\frac{1}{2}$

a) It is fair, since each gets $\geq \frac{1}{4}$.

b)

	B	J	L	C
B thinks	1	0	0	0
J	0	$\frac{5}{6}$	$\frac{1}{6}$	0
L	0	$\frac{2}{3}$	$\frac{1}{3}$	0
C	0	$\frac{1}{2}$	0	$\frac{1}{2}$

No, this is not envy-free.
Lily envies Jacob.

c) No it is not equitable. $1 \neq \frac{5}{6} \neq \frac{1}{3} \neq \frac{1}{2}$. Not even two of the players think they got the same fraction. Equitable would require all four to get the same fraction.