Pot: $90,000

David \ Sandra	Split	Steal
Split	\$45k, \$45k	\$0, \$90k
Steal	\$90k, \$0	\$0, \$0

Suppose that David values fairness first and then money and is benevolent towards Sandra:

David's preferences:		**David's utility:**
best	(\$45k, \$45k)	3
	(\$90k, \$0)	2
worst	(\$0, \$90k), (\$0, \$0)	1

For David Split weakly dominates Steal

David \ Sandra	Split	Steal
Split	3, 3	1, 4
Steal	2, 1	1, 2

For Sandra Steal strictly dominates Split

What if Sandra is selfish and greedy? and spiteful

		Utility:
best	($0, $90k)	4
	($45k, $45k)	3
	($0, $0)	2
worst	($90k, $0)	1

Read Definitions 2.2.1 and 2.2.2 in textbook (Chapter 2)

D is a weakly dominant strategy

Player 1	E	F	G
A	4 …	4 …	1 …
B	4 …	3 …	2 …
C	4 …	4 …	1 …
D	5 …	4 …	3 …

Player 2

FOR PLAYER 1

Strict dominance: D strictly dominates B

Weak dominance: D weakly dominates A

D weakly dominates C

Equivalence: A and C are equivalent

Read Definitions 2.2.1 and 2.2.2 in textbook (Chapter 2)

Player 2

Player 1	E	F	G
A	4 ...	4 ...	3 ...
B	4 ...	3 ...	2 ...
C	4 ...	4 ...	3 ...
D	2 ...	4 ...	3 ...

Changes from previous slide

A is a weakly dominant strategy

C is a weakly dominant strategy :
- C is equivalent to A
- C weakly dominates B
- C weakly dominates D

A strategy is strictly dominant if it strictly dominates every other strategy.

A strategy x, which is not strictly dominant, is weakly dominant if, when compared to any other strategy y, either x dominates (weakly or strictly) y or x is equivalent to y

Second-price auction:

the highest bidder wins and pays the second highest bid

Bidder	1	2	3	4	5	6	7
Bid	$10	$12	$8	$20	$22	$18	$15

winner pays $20

Bidder	1	2	3	4	5	6	7
Bid	$10	$12	$22	$20	$22	$18	$22

winner (by the pre-specified tie-breaking rules) pays $22

In case of ties the rules have to specify how the winner is picked (first to submit his bid? first in alphabetical order? coin toss? …)

The case of TWO bidders:

Possible bids: \$10, \$20, \$30

2

1 \ 2	\$10	\$20	\$30
\$10	winner pays \$10	2 wins pays \$10	2 wins pays \$10
\$20	1 wins pays \$10	winner pays \$20	2 wins pays \$20
\$30	1 wins pays \$10	1 wins pays \$20	winner pays \$30

payoff to player 1:

$$\begin{cases} v_1 - p & \text{if 1 is the winner and has to pay \$p} \\ 0 & \text{if 1 is not the winner} \end{cases}$$

(v_1 = true value of objet to player 1)