Individual Demand

Start by graphing **WTP** bids for person A:

Waiver	WTP
1	10
2	10
3	5
4	5

Height: WTP for a particular waiver

$WTP(Q)$ = WTP for waiver number Q

A's WTP for waiver 2 is $WTP_A(2) = 10$

A's WTP for waiver 3 is $WTP_A(3) = 5$

WTP for several waivers together?

Add up WTP's for individual waivers

WTP for N waivers:

$$\sum_{\mathrm{i}}^{\mathrm{N}} \mathrm{WTP}(Q_i)$$

Example: A's WTP for waivers 1 & 2

$$WTP_A(1) + WTP_A(2) = 10 + 10 = 20$$

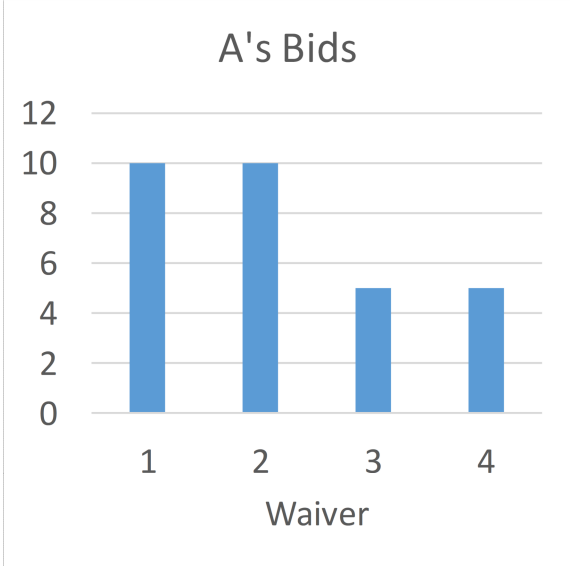
Can also find **quantity** Q person A would **buy** at a given price P:

A's decision rules:

1. **Buy** any units with $WTP_A > P$ (net gain)
2. **Buy** any units with $WTP_A = P$ (indifferent)
3. **Don't buy** units with $WTP_A < P$

Result: A's *demand* at P

Example: suppose $P = 6$:



Applying decision rules:

Waiver	WTP	P	**Net**	**Buy?**
1	10	6	+4	**Yes**
2	10	6	+4	**Yes**
3	5	6	-1	No
4	5	6	-1	No

Gain on purchased waivers is consumer surplus CS:

Consumer surplus on a single waiver i:

$$CS_i = WTP_i - P$$

Person A, waivers 1 and 2: $CS_1 = 4, CS_2 = 4$

Consumer surplus on purchase of N waivers:

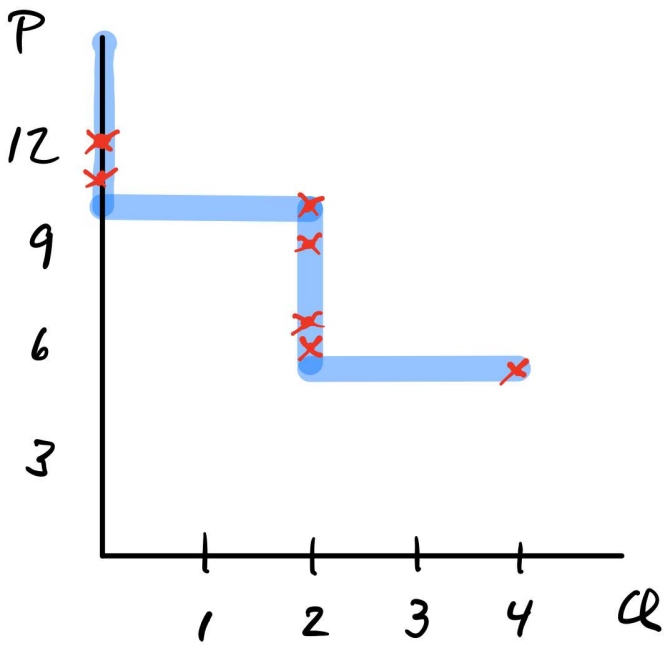
$$CS = \sum_{i}^{N} CS_i$$

Person A, total: $CS = CS_1 + CS_2 = 4 + 4 = 8$

Demand *curve* is Q demanded for each possible P:

- Start at high price and sweep down axis:

P	Q
12	0
11	0
10	2
9	2
…	
7	2
6	2
5	4
…	



Third use of data beyond $WTP(Q)$ and $Q^D(P)$:

Marginal benefit (MB) of *giving* someone a unit

Take to be equal to what they would have been WTP:

$$MB_i = WTP_i$$

Giving person A waiver 1: $MB_1 = 10$