

Setting Reserve Prices

In this experiment you will have multiple opportunities to sell goods by auction. In each auction you will receive a number of computer-generated bids for your good. Your payoff will depend on the bids you receive and your choice of a reserve price.

Reserve price. This is your decision regarding the minimum price at which you are willing to sell the good. You will only sell the good if the highest bid is greater than your reserve price.

Bids. Each of the bids you will receive is determined independently and randomly by drawing a dollar value between 0 and \$100. For instance, if there are two bids, I will randomly draw a value between 0 and \$100 to determine the first bid. And then I will do this again to determine the second bid. In the random draws, all values are equally likely. That is, the probability of any particular dollar value being selected is the same as any other.

Payment if Sale Occurs. As mentioned above, you only sell the good if the highest bid is greater than your reserve price. When this occurs you receive a payment equal to the second-highest bid or the reserve price, whichever is greater.

Seller Value. In some of the auctions we will run today you will have your own private value for the good you are selling. You will be told your value before the auction begins and before you decide on a reserve price.

Your payoff. Your payoff is always given by the profit you earn in the auction. If you do not sell the good, your payoff is zero. This is true regardless of your private value. If you do sell the good, your payoff is given by your profit, which is the difference between the payment you receive and your value.

Examples: (Your Value = V , Reserve price = R , Highest bid = $b^{(1)}$, Second-highest bid = $b^{(2)}$).

1. $V = 0, R = 0, b^{(1)} = 70, b^{(2)} = 60$. Your payoff equals 60.
2. $V = 0, R = 50, b^{(1)} = 70, b^{(2)} = 40$. Your payoff equals 50.
3. $V = 0, R = 50, b^{(1)} = 45, b^{(2)} = 40$. Your payoff equals 0.
4. $V = 30, R = 20, b^{(1)} = 50, b^{(2)} = 40$. Your payoff equals 10.
5. $V = 30, R = 20, b^{(1)} = 40, b^{(2)} = 10$. Your payoff equals -10.
6. $V = 30, R = 50, b^{(1)} = 45, b^{(2)} = 40$. Your payoff equals 0.

Questions. Please answer the following questions that follow from the above auction rules.

- (1) True or False: If you set a positive reserve price and do not sell the good (i.e., the highest bid is below your reserve price) your payoff for the auction is zero.
- (2) True or False: If you set reserve price that is at least as high as your value, then your profit will be at least zero no matter what bids you receive.
- (3) True or False: If you set a reserve price that is below your value, then your profit will be negative no matter what bids you receive.
- (4) True or False: A reserve price that happens to lie below the highest bid but above the second highest bid will increase your payment.
- (5) True or False: The only way that setting a reserve price above your value can increase your payment is if it happens to lie between the highest- and second-highest bid.

Name: _____

Round 1

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 2

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 3

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 4

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 5

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 6

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 7

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 8

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 9

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 10

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 11

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 12

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 13

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 14

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 15

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 16

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 17

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 18

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 19

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Round 20

Treatment #1: Two bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	

Treatment #2: Five bidders

Your Value	Your Reserve R	Highest Bid $b^{(1)}$	Second Highest Bid $b^{(2)}$	<i>Calculating your profit</i>	Your Profit
\$0				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\}$ If $b^{(1)} < R$ then enter \$0	
\$30				If $b^{(1)} \geq R$ then enter $\max\{R, b^{(2)}\} - \$30$ If $b^{(1)} < R$ then enter \$0	