

## HW assignment #5

### Part 1: Classwork

Follow the videos and submit your spreadsheet solution to:

1. The NEES example (including sensitivity analysis).
2. The mobile oil company problem.
3. Keep the investment (example 2 in Utility slides).

### Part 2: Mobile oil company sensitivity analysis

For the Mobile oil company problem that we solved in class, find what would be the range of the false negative percentage such that the result would be to carry out the survey. Here are the recommended steps:

- a) Solve the problem when false negative = 10%. Make sure you repeat the calculations in slides 27-28 and update your decision tree accordingly. What result did you get?
- b) Set the false negative percentage to be a sensitivity parameter, and generate a chart that shows the expected profit as a function of the false negative percentage. What is the range that results in carrying out the survey?
- c) Submit your spreadsheet with your answer.

### Problem 3: Bet on what horse

Solve the problem “Bet on what horse?” which appears in the Utility class slides (slides 22-24). If you start from the following initial guess:

<i>Risk tolerance parameter</i>							
R	\$ 25,000						
	Waste O'Time	Fool's Folly	First in Ninth	Save Your Money	Tea Biscuit		
Prob of coming first	35%	10%	10%	30%	15%		
Payout on \$1 bet	\$ 2.50	\$ 4.00	\$ 4.50	\$ 5.00	\$ 18.00		
Bets	\$ 400.00	\$ 1,000.00	\$ 1,500.00	\$ 2,000.00	\$ 100.00	Expected	
Winnings if first	\$ 1,000.00	\$ 4,000.00	\$ 6,750.00	\$ 10,000.00	\$ 1,800.00	\$4,695.00	CE
Utility if first	0.04	0.15	0.24	0.33	0.07	\$ 0.16	\$4,403.39

The solution that you end up with would yield the following:

Expected		
9171.011	CE	RP
0.251714	7249.258	1921.753