

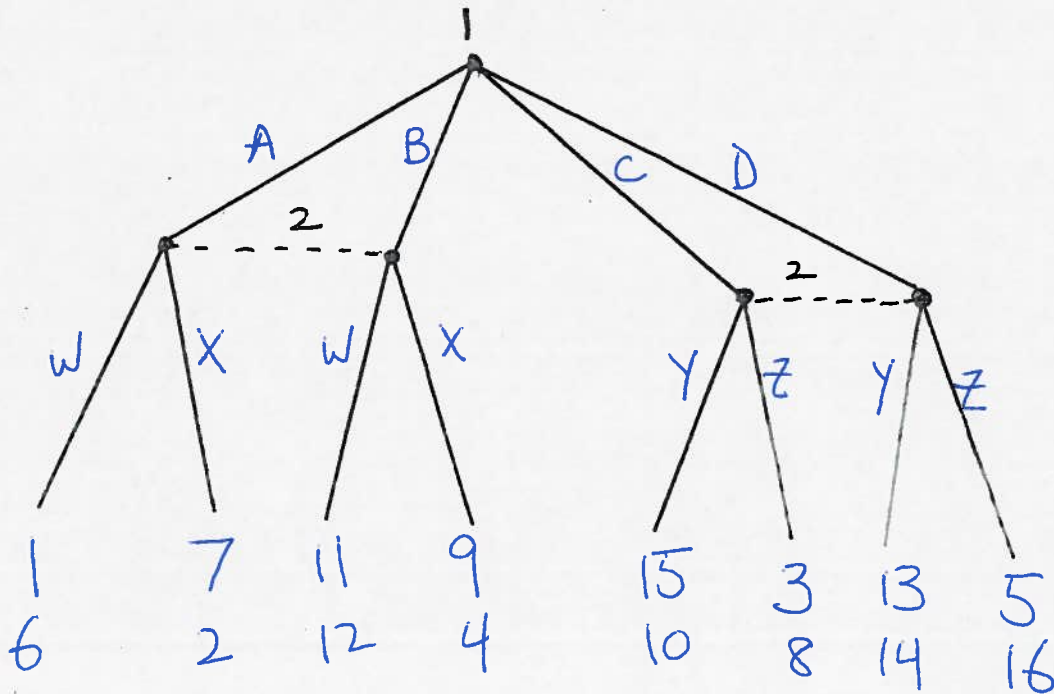
Your Name: _____

The Ohio State University
Department of Economics
First Midterm Examination

Econ 5001
Spring 2017
Prof. James Peck

Directions: Answer all questions, show all work, and label all figures.

1. (20 points) Convert the following extensive form game into normal form, by drawing the payoff matrix, labeling the strategies corresponding to the rows and columns, and filling in the payoffs.



2. (20 points) Consider the following game.

		player 2		
		A	B	C
player 1	X	3,4	0,2	1,2
	Y	2,4	4,2	0,8
	Z	1,2	6,4	4,0

(a) (10 points) Find the set of player 2's best responses to the belief, $\theta_1 = (\frac{1}{4}, \frac{1}{4}, \frac{1}{2})$. That is, player 2 believes that player 1 will choose X with probability one quarter, Y with probability one quarter, and Z with probability one half.

(b) (10 points) Find all of the efficient strategy profiles for this game.

3. (20 points) *In the following game, is player 2's strategy X dominated? If your answer is YES, provide a strategy (pure or mixed) that dominates X. If your answer is NO, provide a belief for which X is a best response.*

		player 2			
		W	X	Y	Z
player 1	U	4,9	3,8	4,1	7,7
	D	4,6	2,7	3,20	0,6

4. (20 points) Consider the following game.

		player 2			
		U	V	W	X
player 1	A	5,3	5,4	9,2	7,2
	B	3,9	3,5	7,7	0,5
	C	4,5	4,6	0,4	1,5
	D	3,1	2,5	8,0	0,7

Solve this game by iterative elimination of dominated strategies. To receive credit, indicate the strategies you eliminate, in the order you eliminate them, here:

5. (20 points) Consider the following game. All of the payoff numbers are specified, with the exception of those denoted by x . Find all values of the number, x , such that (F, J) is a Nash equilibrium. (x must take on the same value in all three places in the matrix.) Show your work.

		player 2		
		J	K	L
player 1	F	$3, x$	$2, 1$	$6, 2$
	G	$1, 0$	$7, 7$	$4, x$
	H	$x, 6$	$5, 3$	$0, 0$