Feedback — In-Video Quizzes Week 6

You submitted this quiz on **Tue 12 Feb 2013 12:59 PM CET**. You got a score of **3.00** out of **3.00**.

Question 1

6-2 Coalitional Game Theory: Definitions

Suppose $N = 3$ and $v(1) = v(2) = v(3) = 1$. Which of the following payoff functions is superadditive?

Your Answer		Score	Explanation
b) $v(1,2) = 3$, $v(1,3) = 4$, $v(2,3) = 5$, $v(1,2,3) = 7$;	✓	1.00	
Total		1.00 / 1.00	

Question Explanation

(b) is true.
- Use the definition of superadditivity to check that (b) is the answer.
- (a) is not supperaditive because $5 = v(2, 3 \cup 1) < v(2,3) + v(1) = 5 + 1$.
- (c) is not supperaditive because $0 = v(1 \cup 2) < v(1) + v(2) = 1 + 1$.

Question 2

6-3 The Shapley Value

Suppose $N = 2$ and $v(1) = 0$, $v(2) = 2$, $v(1,2) = 2$. What is the Shapley Value of both players?

Your Answer		Score	Explanation
d) $\phi_1(N, v) = 0$, $\phi_2(N, v) = 1$	✓	1.00	
Total		1.00 / 1.00	

Question 3

6-4 The Core
- Suppose $N = 3$ and $v(1) = v(2) = v(3) = 0$, $v(1, 2) = v(2, 3) = v(3, 1) = 2/3$, $v(1, 2, 3) = 1$.

Which allocation is in the core of this coalitional game?

Your Answer		Score	Explanation
c) (1/3, 1/3, 1/3);	✓	1.00	
Total		1.00 / 1.00	

Question Explanation

(c) is true.
- By definition, the core of this game is formed by a triplet $(x_1, x_2, x_3) \in R_+^3$ that satisfies:
  - $x_i + x_j \geq 2/3$ for $i \neq j$
  - $x_1 + x_2 + x_3 \geq 1$
  - Then, the core is a singleton with $(x_1, x_2, x_3) = (1/3, 1/3, 1/3)$.