Econ 172A, Fall 2012: Quiz IV, Solutions

42 possible (6 points per question). 30 median.

Form 1 Solutions

1. 48. Take Item 3, then 2, then .6 item 1. Value: $18 + 18 + 12$.

2. 47. Take Item 1, then 3, then .5 item 2. Value: $20 + 18 + 9$.

3. 44. Take item 3, then 2, then 4, then 5. Value: $18 + 18 + 7 + 1$.

4. 44. From part 3 (your relaxed solution actually solves the subproblem).

5. False. (You do not know everything possible about subproblem 1).

6. True. (You have solved subproblem 2.).

7. The value must be between 47 and 44. (47 is the upper bound and 44 is the lower bound.)

Form 2 Solutions

1. 44. Take Item 3, then 2, then .4 item 1. Value: $18 + 18 + 8$.

2. 42. Take Item 1, then 3, then .25 item 2. Value: $20 + 18 + 4.5$, round down to integer.

3. 43. Take item 3, then 2, then 4. Value: $18 + 18 + 7$.

4. 43. From part 3 (your relaxed solution actually solves the subproblem).

5. True. (Upper bound of Subproblem 1 less than Lower Bound from Subproblem 2).

6. True. (You have solved subproblem 2.).

7. The value must be 43

Form 3 Solutions

1. 46. Take Item 3, then 2, then .5 item 1. Value: $18 + 18 + 10$.

2. 44. Take Item 1, then 3, then 3/8 item 2. Value: $20 + 18 + (3/8)(18)$, round down to integer.

3. 44. Take item 3, then 2, then 4, then 5. Value: $18 + 18 + 7 + 1$.

4. 44. From part 3 (your relaxed solution actually solves the subproblem).

5. True. (Upper bound of Subproblem 1 is equal to lower bound of Subproblem 2).

6. True. (You have solved Subproblem 2.).

7. The value must be 44. (44 is the upper bound.)