Practice With Bankruptcy Methods (2019)

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1. For the following bankruptcy situations with 2 claimants, find:

a. Entity equity
b. Equality of loss, with possible subsidization
c. The Maimonides (gain) solution
d. The Maimonides loss solution
e. The Shapley value solution
f. The proportional solution
g. Concede and divide

i. E = 40; A claims 20; B claims 100
ii. E = 80; A claims 40; B claims 100
iii. E = 120; A claims 40; B claims 100

2. For the following bankruptcy situations with 3 claimants, find:

a. The Maimonides (gain) solution
b. The Maimonides loss solution
c. The Shapley value solution
d. The proportional solution
e. The "Talmudic" solution

i. E = 100; A claims 40; B claims 70; C claims 90
ii. E = 120; A claims 40; B claims 70; C claims 90
iii. E = 180; A claims 40; B claims 70; C claims 90

(For a. and b. draw appropriate fluid diagrams to help you with the solution.)

3. For the following bankruptcy situations with 3 claimants, find:

a. The Maimonides (gain) solution
b. The Maimonides loss solution
c. The Shapley value solution
e. The proportional solution
e. The "Talmudic" solution

(For a. and b. draw appropriate fluid diagrams to help you with the solution.)

i. E = 120; A claims 60; B claims 90; C claims 100.
ii. E = 240; A claims 60; B claims 90; C claims 100

You may want to check that the Talmudic method is "consistent" with respect to two player subsets, with respect to concede and divide.

For fun:

Can you find an example with two claimants where:

a. Entity equity
b. Equality of loss, with possible subsidization
c. The Maimonides (gain) solution
d. The Maimonides loss solution
e. The Shapley value solution
f. The proportional solution
g. Concede and divide

all yield different solutions? If you can't find such an example, which of these solutions for two players might always be the same?

A quite recent scholarly article about bankrupcty problems is:

Thomson, William. "Axiomatic and game-theoretic analysis of bankruptcy and taxation problems: an update." Mathematical Social Sciences 74 (2015): 41-59.

Preprint version:

http://www.iser.osaka-u.ac.jp/collabo/20140524/Claims_Problems.pdf