(Question adapted from Winston)

Three lawyers have banded together to form a joint practice: the Mighty Trio. The overhead for the practice is $200,000 per year. Each lawyer brings in annual revenues and incurs annual variable costs as follows: Andreas- $775,000 in revenue, $200,000 in variable cost; Liam - $800,000 in revenue, $175,000 in variable cost; and Phil - $600,000 in revenue, $190,000 in variable cost.

The Mighty Trio wants to use game theory to determine how much each of them should be paid.

1. Determine the relevant characteristic function
2. Find the core of the game. What have you observed?
3. Determine the Shapley value of the game. Does the Shapley value give a reasonable division of the practices' profits?