Question 1

a) 3 agents $Ag = \{a, b, c\}$ are evaluating their expected utility in terms of collaborating in different groups. However, coalitional games present several problems from a computational perspective. Explain what you understand these problems to be by giving *two* examples of representation of the characteristic function of the 3 agents:

$$v(\emptyset) = 0$$
$$v(\{a\}) = 3, v(\{b\}) = 0, v(\{c\}) = 7$$
$$v(\{a, b\}) = 13, v(\{a, c\}) = 16, v(\{b, c\}) = 7$$
$$v(\{a, b, c\}) = 26$$

b) Solve the game.

c) Calculate the Shapley value for each player in this game.