During the Second World War the Royal Air Force (RAF) had many

 foreign pilots speaking different languages and more or less

 trained on the different types of aircraft. The RAF had to form

 pilot/co-pilot pairs (‘crews’) for every plane with a compatible

 language and a sufficiently good knowledge of the aircraft type. In

 our example there are eight pilots. In the following table every

 pilot is characterized by a mark between 0 (worst) and 20 (best)

 for his language skills (in English, French, Dutch, and Norwegian),

 and for his experience with different two-seater aircraft

 (reconnaissance, transport, bomber, fighterbomber, and supply

 planes).

Ratings of pilots

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 | |Pilot | 1| 2| 3| 4| 5| 6| 7| 8|

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 |Language |English |20|14| 0|13| 0| 0| 8| 8|

 | |French |12| 0| 0|10|15|20| 8| 9|

 | |Dutch | 0|20|12| 0| 8|11|14|12|

 | |Norwegian | 0| 0| 0| 0|17| 0| 0|16|

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 |Plane type|Reconnaissance |18|12|15| 0| 0| 0| 8| 0|

 | |Transport |10| 0| 9|14|15| 8|12|13|

 | |Bomber | 0|17| 0|11|13|10| 0| 0|

 | |Fighter-bomber | 0| 0|14| 0| 0|12|16| 0|

 | |Supply plane | 0| 0| 0| 0|12|18| 0|18|

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 **A valid flight crew consists of two pilots that both have each at**

 **least 10/20 for the same language and 10/20 on the same aircraft**

 **type**.

 Question 1:

 **Is it possible to have all pilots fly?**

 Subsequently, we calculate for every valid flight crew the sum of

 their scores for every aircraft type for which both pilots are

 rated at least 10/20. This allows us to define for every crew the

 maximum score among these marks. For example, pilots 5 and 6 have

 marks 13 and 10 on bombers and 12 and 18 on supply planes. The

 score for this crew is therefore max(13 + 10, 12 + 18) = 30. Question 2:

 **Which is the set of crews with maximum total score?**