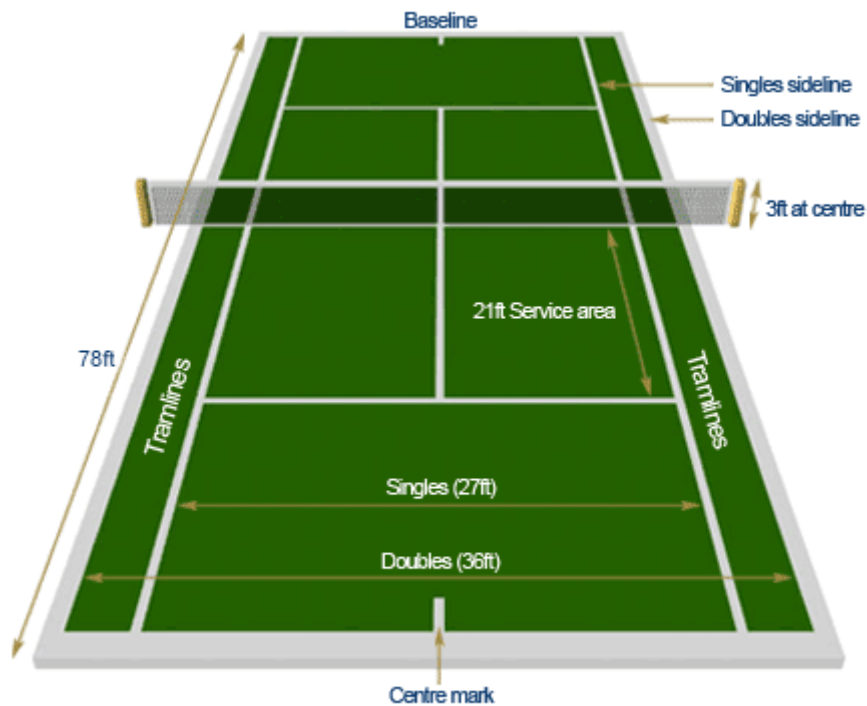


Assignment C1

Roger Federer is serving for a match. He wants to score an ace, so he will try to hit the ball so hard that the service takes the shortest time to reach the other baseline at the other side of the court. Your task is to help determine

1. The optimum angle which the racquet face makes with the vertical during the impact
2. The racquet head velocity

Roger Federer is 186cm tall. State any assumptions you have made (within reasons). You may also use the tennis court dimensions as given in the figure below.



Note: Your solutions should include a range of possible angles and racquet head velocities.