From baseball averages to calculating the velocity of a basketball to statistics needed for gambling in sports, math seems to be everywhere. However, math’s graph theory provides a visual scheduling system for teams and players long before any action has taken place on the field. Graph theory classifies a complete graph as one where different points on the graph (vertices) share only one connection. This is to say that if number of points on the graph are represented by *n* than the number of connections between the points can be predicted to be *n-1*. If each point is a player or a team, given four players there will be three matches for each player before every player had a chance to face every other player.

Player 1 Player 2

Player 3 Player 4

Figure above shows the relationship of player 1 with the other players. Using graph theory, we can show this relationship for all the players with this graph:

1 2

3 4

Such a graph maybe an overkill for small number of players but is valuable in more confusing circumstances. The number of connections at each point on the graph is also called the degree of the graph. The degree of the graph above is 3. To calculate the degree of the graph, subtracting one from the number of vertices is easy enough to remember, so I do not know why the formula n[(n-1)/2] is used to complicate the issue! But, this is a good reason to study graph theory in more detail.

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