

A league table

Team	Played	Won	Lost	Drawn	For	Against
A			1	0	1	2
B			1		0	5
C	2		1		7	4
D		1		0	2	2
E		2		0	5	2

1) Given the limited information on the table above, I am able to find all of the missing data. Team C has played two games. We are told one of their games was a loss. Given the score totals it is not possible for C to have had a draw and a loss in their two games played. This is because their points scored will always be higher than the points scored against them. Because Team C can't have a draw this gives us four games that DID NOT result in a draw. If four of the five teams DID NOT draw then no team could have drawn.

Updated Table (1)

Team	Played	Won	Lost	Drawn	For	Against
A			1	0	1	2
B			1	0	0	5
C	2		1	0	7	4
D		1		0	2	2
E		2		0	5	2

2) Team B has not scored any points against an opposing team so they haven't won a game. Team B also hasn't had a draw. This means Team B has played only one game and had five points scored on them. This must be either Team C or Team E as both of these teams have scored at least five points against another team. Team E has scored five points but they have two wins. This means they can't have played against team B. If they did, they'd need to win a game with zero points which isn't possible. So, Team C defeated Team B 5-0. Team C has played two games and one is a loss. So their other game is a win against Team B.

Updated Table (2)

Team	Played	Won	Lost	Drawn	For	Against
A			1	0	1	2
B	1	0	1	0	0	5
C	2	1	1	0	7	4
D		1		0	2	2
E		2		0	5	2

3) After figuring out Team C's winning match, we know that they lost to a team, 2-4 because these are the remaining for/against totals after deducting the points from their previous win. So a team scored four points against Team C. It can't be Team A because they have only scored one point total. It can't be Team D because they have only scored two points total. We know it isn't B. This leaves Team E. Team E beat Team C 4-2. Table doesn't need to be updated as Team E's wins were known and Team C's losses were known.

4) The previous result means that Team E won a game by scoring one point. This means the team they beat scored zero points. As no team has draws. This has to be either Team D or Team A as Team C and Team B have had their losses determined. If Team E beat Team A with a match score of 1-0, then Team A had to have drawn a game with the score 1-1, but we haven't had any draws between any teams. Or Team A would need to have won two games but they've only scored one point total. Team E beat Team D 1-0. This also accounts for all of Team E's For/Against totals so we can conclude they played two games which were two wins. This fills out the Lost column as well. It partially fills out Team D's table with one loss, but there is more information we need to gather.

Updated Table (4)

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Etude 13 Part A - A League Table

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A			1	0	1	2
B	1	0	1	0	0	5
C	2	1	1	0	7	4
D		1	1	0	2	2
E	2	2	0	0	5	2

5) Since Team D lost to Team E 0-1. This means Team D either won a game 2-1 OR they won a game 2-0 and lost a game 0-1. Team A is the only team left with unknown game information. Since this is round-robin a team only plays the same team once. And so we know Team D can't have lost and won against Team A. So we are able to determine Team D beat Team A 2-1.

Updated Table (5) (final table)

Team	Played	Won	Lost	Drawn	For	Against
A	1	0	1	0	1	2
B	1	0	1	0	0	5
C	2	1	1	0	7	4
D	2	1	1	0	2	2
E	2	2	0	0	5	2

Game results:

Team C beats Team B 5-0

Team E beats Team C 4-2

Team E beats Team D 1-0

Team D beats Team A 2-1