

## FIFA TIEBREAKER ERROR

**Update (July 15th):** The following document was sent to FIFA and the CSA on July 11th, 2009 and elicited different responses from the two parties. For a simpler explanation of the underlying problem, refer to the following webpage:

<http://webhome.csc.uvic.ca/~haron/FIFA/>

The above webpage will continue to be updated while this file will not.

The first round of the FIFA World Cup involves groups of four teams apiece. Within each group the teams play a round-robin tournament. Winning an individual match is worth three points, and drawing an individual match is worth one point. After the round-robin is finished the top two teams from each group advance to the second round. Consider the following standings, match results, and then the official FIFA regulations (Article 39.5).

(Pts = points, W = wins, D = draws, L = losses, GF = goals for, GA = goals against, GD = goal differential)

| Flag  | Country | Pts | W | D | L | GF | GA | GD |
|---|---------|-----|---|---|---|----|----|----|
|  | Chile   | 6   | 2 | 0 | 1 | 7  | 4  | +3 |
|  | Morocco | 6   | 2 | 0 | 1 | 7  | 4  | +3 |
|  | Turkey  | 6   | 2 | 0 | 1 | 7  | 4  | +3 |
|  | Greece  | 0   | 0 | 0 | 3 | 2  | 11 | -9 |

Morocco 2    Chile 3    Turkey 3    Chile 2    Morocco 5    Turkey 4  
 Turkey 0    Morocco 0    Chile 2    Greece 1    Greece 1    Greece 0

Article 39.5: The ranking of each team in each group will be determined as follows:

- (a) greatest number of points obtained in all group matches;
- (b) goal difference in all group matches;
- (c) greatest number of goals scored in all group matches.




If two or more teams are equal on the basis of the above three criteria, their rankings will be determined as follows:

- (d) greatest number of points obtained in the group matches between the teams concerned;
- (e) goal difference resulting from the group matches between the teams concerned;
- (f) greater number of goals scored in all group matches between the teams concerned;
- (g) drawing of lots by the FIFA Organising Committee.

[http://www.fifa.com/mm/document/tournament/competition/fifa\\_wc\\_south\\_africa\\_2010\\_regulations\\_en\\_14123.pdf](http://www.fifa.com/mm/document/tournament/competition/fifa_wc_south_africa_2010_regulations_en_14123.pdf)

The problem is that the regulations can be logically interpreted so that three teams can claim to advance to the second round. After applying rules (a)-(c) we have a three way tie with Chile, Morocco, and Turkey. According to the regulations we need to look at the games played between those three teams to break the tie. The relevant results appear below. (Within the remaining rules (d) - (f) there is mention of the *teams concerned*. We will make explicit reference to this term throughout the answers below to clarify the set of teams to which the rules are being applied.)

(Pts = points, W = wins, D = draws, L = losses, GF = goals for, GA = goals against, GD = goal differential)

| Flag  | Country | Pts | W | D | L | GF | GA | GD |
|---|---------|-----|---|---|---|----|----|----|
|  | Chile   | 3   | 1 | 0 | 1 | 5  | 3  | +2 |
|  | Morocco | 3   | 1 | 0 | 1 | 2  | 3  | -1 |
|  | Turkey  | 3   | 1 | 0 | 1 | 3  | 4  | -1 |



|         |   |         |   |        |   |
|---------|---|---------|---|--------|---|
| Morocco | 2 | Chile   | 3 | Turkey | 3 |
| Turkey  | 0 | Morocco | 0 | Chile  | 2 |

Let us start our reasoning from rule (d) with the teams concerned being Chile, Turkey, and Morocco. Applying rule (d) does not break the tie since each team has three points (one win and one loss) against each other. Therefore, we apply rule (e). Since Chile has the best goal difference of +2 it finishes first among the three teams and so it advances to the second round.

This is where the rules become ambiguous. Are the teams concerned Chile, Turkey, and Morocco (since we are still breaking a three-way tie)? Or are the teams concerned now Turkey and Morocco (since we are now breaking a two-way tie)? There will be a different second-place finisher depending on this decision.

Interpretation 1: Let us continue our reasoning from the point where Chile was determined to be the first-place finisher. Rule (e) separates Chile from Turkey and Morocco, but does not separate Turkey from Morocco since both of their goal differences among the teams concerned is -1. Therefore, the teams concerned remain Chile, Turkey, and Morocco, and we need to continue breaking this three-way tie. We proceed to rule (f). Since Turkey has scored 3 goals among the teams concerned, and Morocco has scored only 2 goals among the teams concerned, then Turkey finishes second among the three teams and so it advances to the second round.

Interpretation 2: Let us continue our reasoning from the point where Chile was determined to be the first-place finisher. Rule (e) separates Chile from Turkey and Morocco, but does not separate Turkey from Morocco since both of their goal differences among the teams concerned is -1. Therefore, the teams concerned become Turkey and Morocco and we need to break this two-way tie. According to the regulations we need to look at the games played between those two teams to break the tie. The relevant results appear below.

| Flag  | Country | Pts | W | D | L | GF | GA | GD |
|---|---------|-----|---|---|---|----|----|----|
|  | Morocco | 3   | 1 | 0 | 0 | 2  | 0  | +2 |
|  | Turkey  | 0   | 0 | 0 | 1 | 0  | 2  | -2 |

|         |   |
|---------|---|
| Morocco | 2 |
| Turkey  | 0 |

*Option 1:* To break the two-way tie we proceed to the next rule, which rule (f). Since Morocco has scored 2 goals among the teams concerned, and Turkey has scored 0 goals among the teams concerned, then Morocco finishes ahead of Turkey. Therefore, Morocco finishes second among the three teams and so it advances to the second round.

*Option 2:* To break the two-way tie we proceed to the rule that has the highest precedence, which rule (d). Since Morocco has 3 points among the teams concerned, and Turkey has 0 points among the teams concerned, then Morocco finishes ahead of Turkey. Therefore, Morocco finishes second among the three teams and so it advances to the second round.

The FIFA regulations need to be augmented to avoid this potential problem, since otherwise two different countries will have a logical argument for why they should finish in second-place without having to apply rule g) (drawing of lots).