Problem of the Week
Problem A and Solution
Track and Field

Problem

Andre, Bilal, Glenna, and Juanita are all friends. They have given each other nicknames as well. The four nicknames are Boss, Buzz, Cosmo, and Tiger. The friends are competing in the track and field day at their school. Using the following clues, determine the nickname of each of the friends.

Clues:

1. Juanita beat Tiger in the 400 m race, but Juanita lost to Buzz in the high jump.

2. Glenna and Tiger tied in the long jump, but Boss beat Glenna in the 1500 m race.

3. Cosmo, Tiger and Andre found the water station together after the first event.

4. Cosmo and Juanita ran separate legs on the relay race.

A table with a column for each name and a row for each nickname may be helpful in solving this problem.

Solution

We will give the final answer and then show the solution. Andre's nickname is Buzz, Bilal's nickname is Tiger, Glenna's nickname is Cosmo, and Juanita's nickname is Boss.

Now, each clue eliminates at least one possible person/nickname pair. If *Person A* is doing something with *Person B*, then *Person A* and *Person B* must be different people. We can put an ✘ in the table where we know someone does not match a nickname.

There are several ways to determine the correct nicknames; here is one way. We can start with the first clue: *Juanita beat Tiger in the 400 m race, but Juanita lost to Buzz in the high jump.*

Using this information, we can update the table by adding two ✘s in the column for Juanita: an ✘ in the cell for Buzz and an ✘ in the cell for Tiger.

	Andre	Bilal	Glenna	Juanita
Boss				
Buzz				✘
Cosmo				
Tiger				✘

From the second, third, and fourth clues, we can add five new ✗s to the table as follows.

	Andre	Bilal	Glenna	Juanita
Boss			✗	
Buzz				✗
Cosmo	✗			✗
Tiger	✗		✗	✗

At this point, we know that *Juanita* must have the nickname *Boss*, since this is the only nickname left in her column. We can put a check in that box, and eliminate *Boss* as the possible nickname for everyone else, by putting an ✗ in the remaining empty cells in the row for Boss.

	Andre	Bilal	Glenna	Juanita
Boss	✗	✗	✗	✔
Buzz				✗
Cosmo	✗			✗
Tiger	✗		✗	✗

Now we can conclude that *Andre* must have the nickname *Buzz*, since this is the only nickname left in his column. We can put a check in that box, and eliminate *Buzz* as the possible nickname for everyone else.

	Andre	Bilal	Glenna	Juanita
Boss	✗	✗	✗	✔
Buzz	✔	✗	✗	✗
Cosmo	✗			✗
Tiger	✗		✗	✗

Next we can conclude that *Glenna* must have the nickname *Cosmo*, since this is the only nickname left in her column. We can put a check in that box, and eliminate *Cosmo* as the possible nickname for *Bilal*, who is the only person left. The only nickname left is *Tiger*. That must be *Bilal's* nickname. The final version of the table is below.

	Andre	Bilal	Glenna	Juanita
Boss	✗	✗	✗	✔
Buzz	✔	✗	✗	✗
Cosmo	✗	✗	✔	✗
Tiger	✗	✔	✗	✗

So Andre's nickname is Buzz, Bilal's nickname is Tiger, Glenna's nickname is Cosmo, and Juanita's nickname is Boss.