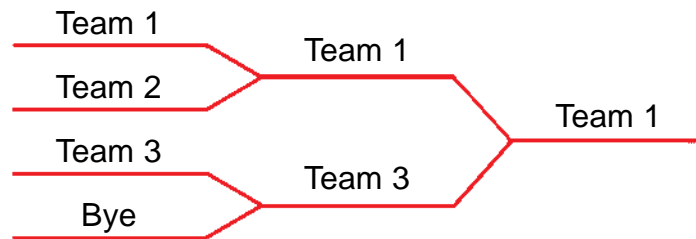


# Tennis Tournament

## Problem-of-the-Week

### The Problem

The intramural tennis club in South Bend, Indiana wants to schedule a single elimination tournament to name their city's champion doubles team. There will be 17 teams in the tournament. If each doubles team must either play or be granted a "bye" in each round, how many games and byes must be scheduled in order to produce one champion? How many games and byes must be scheduled if Indianapolis had 72 tennis teams? The chart below shows the tournament arrangement if there were 3 teams.



### Strategies and Hints

1. Draw a chart to show all the games scheduled.
2. If the teams just kept playing until all were eliminated and no "byes" were granted, how many games would be played?
3. How does the fact that teams must play or have a "bye" at each level of elimination affect the total number of games?

### Extensions

1. Find a pattern for the number of "byes" granted given various numbers of teams.
2. Find a pattern for the number of games played given various numbers of teams.