

Worksheet 1
A&S100
06 September 2002

Name: _____

The following problem was taken from the AMS web site
<http://www.ams.org/new-in-math/cover/voting-decision.html>.

The student government of J.K. University is selecting a new mascot. The preference rankings for the new mascot are listed below.

| Number of Voters | 18 | 12 | 10 | 9 | 4 | 2 |
|-------------------------|-----------|-----------|-----------|----------|----------|----------|
| Boilermakers | 1 | 5 | 5 | 5 | 5 | 5 |
| Bruins | 5 | 1 | 2 | 4 | 2 | 4 |
| Tigers | 4 | 4 | 1 | 2 | 4 | 2 |
| Wildcats | 2 | 3 | 4 | 1 | 3 | 3 |
| Irish | 3 | 2 | 3 | 3 | 1 | 1 |

Which mascot would be chosen using:

1. the plurality method?
2. the plurality method followed by a runoff between the first- and second-place finishers?
3. the sequential runoff method?*
4. Borda's Method?
5. head-to-head comparisons? (i.e. Which mascot is the Condorcet winner?)

* *In a sequential runoff election, the candidate with a majority of first place votes is declared the winner. If no candidate has a majority of the first-place votes, then the candidate with the fewest first-place votes is eliminated and a new election is held for the remaining candidates. This process continues until some candidate has a majority of the first-place votes.*

Write a short **paragraph** describing your observations about the results of this election. What do the results seem to indicate to you about the search for an ideal voting method?