



Activity 4: Approval Voting

Solutions

A.

1. 12 votes
2. 40 votes
3. 15 votes
4. 18 votes
5. With a total of 40 votes, Badminton was selected by the participants.

B.

Steel Gray: 19 votes
Sunflower Yellow: 30 votes
Eggshell: 38 votes
Robin Egg Blue: 41 votes
Candy Apple Red: 63 votes
Candy Apple Red is the winning color.

C.

1. The Orange Bowl and Sugar Bowl are eliminated because they did not receive any first-place votes.

| | | | |
|-----------------|--------|--------|--------|
| 1 st | Rose | Hula | Cotton |
| 2 nd | Hula | Cotton | Hula |
| 3 rd | Cotton | Rose | Rose |

The Hula Bowl is eliminated because it has least number of first-place votes.

| | | | |
|-----------------|--------|--------|--------|
| 1 st | Rose | Cotton | Cotton |
| 2 nd | Cotton | Rose | Rose |

The Cotton Bowl parade is the winner by Plurality with Elimination.

2. Here are head-to-head match-ups.

| | | | | | |
|--------|--------|-------|--------|--------|--------|
| | Cotton | Hula | Orange | Rose | Sugar |
| Cotton | ----- | Hula | Cotton | Cotton | Cotton |
| Hula | ----- | ----- | Hula | Hula | Hula |
| Orange | ----- | ----- | ----- | Orange | Sugar |
| Rose | ----- | ----- | ----- | ----- | Sugar |
| Sugar | ----- | ----- | ----- | ----- | ----- |

Now that you know the head-to-head winners, you can total all the scores and determine the winner of the election.

Hula gets four points.

Cotton gets three points.

Sugar gets two points.

Orange gets one point.

The Hula Bowl parade is the winner by Pairwise Comparison.

3.

The Borda Count for each parade is:

Rose Bowl: 7 points

Cotton Bowl: 10 points

Hula Bowl: 13 points

Sugar Bowl: 8 points

Orange Bowl: 7 points

The Hula Bowl parade is the winner by using the Borda Count method.

4.

| | | 39 | 16 | 45 |
|--------------|-----------------|--------|--------|--------|
| Approved | 1 st | Rose | Hula | Cotton |
| Approved | 2 nd | Hula | Sugar | Hula |
| Approved | 3 rd | Cotton | Orange | Sugar |
| Not Approved | 4 th | Orange | Cotton | Orange |
| Not Approved | 5 th | Sugar | Rose | Rose |

Rose Bowl: 39 votes
Hula Bowl: 100 votes
Cotton Bowl: 84 votes
Sugar Bowl: 61 votes
Orange Bowl: 16 votes

The Hula Bowl parade is the winner if the only the first three choices are approved.

5.

| | | 39 | 16 | 45 |
|--------------|-----------------|--------|--------|--------|
| Approved | 1 st | Rose | Hula | Cotton |
| Approved | 2 nd | Hula | Sugar | Hula |
| Not Approved | 3 rd | Cotton | Orange | Sugar |
| Not Approved | 4 th | Orange | Cotton | Orange |
| Not Approved | 5 th | Sugar | Rose | Rose |

Rose Bowl: 39 votes
Hula Bowl: 100 votes
Cotton Bowl: 45 votes
Sugar Bowl: 16 votes
Orange Bowl: 0 votes

The Hula Bowl parade is the winner if the only the first two choices are approved.

6.

| | | 39 | 16 | 45 |
|----------|-----------------|------|-------|--------|
| Approved | 1 st | Rose | Hula | Cotton |
| Approved | 2 nd | Hula | Sugar | |

| | | | | |
|--------------|-----------------|--------|--------|--|
| Approved | 3 rd | Cotton | Orange | |
| Not Approved | 4 th | Orange | Cotton | |
| Not Approved | 5 th | Sugar | Rose | |

Rose Bowl: 39 votes
Hula Bowl: 61 votes
Cotton Bowl: 84 votes
Sugar Bowl: 16 votes
Orange Bowl: 16 votes

The Cotton Bowl parade is the winner.