

Flaws in Voting Methods

8. Which voting method(s) – plurality, Borda count, plurality with elimination, or pairwise comparison – violate the head-to-head criterion using the following election data?

<b>Number of Votes</b>	<b>20</b>	<b>32</b>	<b>24</b>	<b>50</b>	<b>41</b>
<b>First</b>	A	B	C	A	D
<b>Second</b>	D	C	A	C	B
<b>Third</b>	B	A	D	B	A
<b>Fourth</b>	C	D	B	D	C

9. The board of a local country club is voting for the date of their golf tournament. The choices for the date are June 14 (14), June 21 (21), or June 28 (28). The 21 board members rank their choices according to the following preference table.

<b>Number of Votes</b>	<b>3</b>	<b>7</b>	<b>5</b>	<b>6</b>
<b>First</b>	14	21	28	21
<b>Second</b>	28	28	14	28
<b>Third</b>	21	14	21	14

Using the data provided, does the Borda count method violate the majority criterion?

8. Which voting method(s) – plurality, Borda count, plurality with elimination, or pairwise comparison – violate the head-to-head criterion using the following election data?

<b>Number of Votes</b>	<b>8</b>	<b>12</b>	<b>20</b>	<b>24</b>	<b>30</b>
<b>First</b>	M	N	P	Q	P
<b>Second</b>	P	Q	N	M	M
<b>Third</b>	Q	P	M	N	N
<b>Fourth</b>	N	M	Q	P	Q

9. A committee is voting on a new chairperson. Their choices are Anne (A), Ryan (R), and Victor (V). The 25 committee members rank their choices according to the following preference table.

<b>Number of Votes</b>	<b>8</b>	<b>8</b>	<b>6</b>	<b>3</b>
<b>First</b>	A	R	V	R
<b>Second</b>	R	V	A	A
<b>Third</b>	V	A	R	V

Using the data provided, does the Borda count method violate the majority criterion?

8. Which voting method(s) – plurality, Borda count, plurality with elimination, or pairwise comparison – violate the majority criterion using the following election data?

<b>Number of Votes</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>20</b>
<b>First</b>	A	B	C	B
<b>Second</b>	C	A	A	C
<b>Third</b>	B	C	B	A

9. The high school band is voting on a new mascot. Their choices are a bulldog (B), an eagle (E), and a wildcat (W). The 75 committee members rank their choices according to the following preference table.

<b>Number of Votes</b>	<b>23</b>	<b>20</b>	<b>17</b>	<b>15</b>
<b>First</b>	B	E	W	E
<b>Second</b>	E	W	E	B
<b>Third</b>	W	B	B	W

Using the data provided, does the plurality with elimination method violate the head-to-head criterion?