

# AADV and BAWV

## Instructions for Voters and for Election Officials

### AADV (Approve/Approve/Disapprove Voting)

Because of its simplicity, AADV is normally the recommended voting method. It is directly scored and also has a generalized form which enables it to be used both for single-winner and multiple-winner contests.

#### AADV Ballot

	<u>Approve</u>	<u>Disapprove</u>
Candidate A	<input type="checkbox"/>	<input type="checkbox"/>
Candidate B	<input type="checkbox"/>	<input type="checkbox"/>
Candidate C	<input type="checkbox"/>	<input type="checkbox"/>
Candidate D	<input type="checkbox"/>	<input type="checkbox"/>

**AADV Instructions for Voters:** Mark an “X” in the “**Approved**” box for any one or two candidate(s) (if any) that you really like and believe would be the best one(s) to win this race. Mark an “X” in the “**Disapproved**” box for any one candidate (if any) that you strongly believe would be the worst choice and which you would not want to win this race. If you do not know enough about a candidate or do not have a strong opinion one way or the other, leave both boxes unmarked. Do not mark more than one box for any single candidate.

**AADV Instructions for Election Officials:** Disqualify any ballots which have more than one box marked for the same candidate. Disqualify any ballots which have more than two candidates marked “Approved.” Disqualify any ballots which have more than one candidate marked “Disapproved.” Total the “Approved” votes for each candidate; call this total “A.” Total the “Disapproved” votes for each candidate; call this total “D.” Add “A” and “D” for each candidate; call this sum “V.” Eliminate any candidate whose “V” is less than one plus one percent (rounded to the nearest number of voters) of the largest “V” that any single candidate received. Subtract “D” from “A” for each remaining candidate; call this difference “N.” Eliminate any candidate which has a negative N. The remaining candidate that has the largest “N” is the winner.

**GADV (Generalized Approve/Approve/Disapprove Voting):** Generalized Approve/Disapprove Voting provides for races which have any number of winners (e.g. electing multiple school board members). When electing n winners, voters may approve up to n + 1 candidates and disapprove of  $(n + 1)/2$  candidates (use integer division or round down). The instructions to voters and for

election officials are basically the same as above except for the number of candidates voters may approve and disapprove. The winners then are simply the candidates having the top n scores.

**BAWV (Best/Alternate/Worst Voting)**

BAWV can provide slightly better performance than AADV. It is still simple enough for voters, but its iterative eliminations tally procedure is more complicated for election officials (just like IRV).

**BAWV Ballot**

	<b><u>Best</u></b>	<b><u>Alternate Best</u></b>	<b><u>Worst</u></b>
Candidate A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Candidate B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Candidate C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Candidate D	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**BAWV Instructions for Voters:** Mark an “X” in the “Best” box for one candidate (if any) that you really like and believe would be the best one to win this race. Mark an “X” in the “Alternate” box for one candidate (if any) that you would like to have counted as your best choice in the event that the candidate you have marked best is eliminated. Note that marking a candidate as alternate cannot help or hurt *any* candidate and will not count in any way unless and until your best choice is eliminated. Mark an “X” in the “Worst” box of one candidate (if any) that you dislike and would not want to win this race. If you do not know enough about a candidate or do not have a strong opinion one way or the other, leave all three boxes unmarked. Do not mark more than one box for any single candidate.

**BAWV Instructions for Election Officials:**

1. Disqualify any ballots which have more than one box marked for the same candidate. Disqualify any ballots which have more than one candidate marked “Best.” Disqualify any ballots which have more than one candidate marked “Alternate.” Disqualify any ballots which have more than one candidate marked “Worst.”
2. Total the “Best” votes for each candidate; call this total “B.” Total the “Alternate” votes for each candidate; call this number “A.” Total the “Worst” votes for each candidate; call this total “W.” Add “B” plus “A” plus “W” for each candidate; call this sum “V.” Compute one plus one percent (rounded to the nearest number of voters) of the largest “V” that any single candidate received; call this number “MV.”
3. Eliminate any candidate that has a “V” less than “MV.” Upon eliminating each candidate, unmark the “Best” “box” for any ballots which have selected the candidate being eliminated as

“Best.” For any ballot on which the “Best” box is being unmarked and for which an “Alternate” is marked, change the “Alternate” candidate to “Best.”

4. Total the “Best” votes for each candidate; call this total “B.” Subtract “W” from “B” for each remaining candidate; call this difference “N.”
5. If only one candidate remains and its “N” is not negative, declare that candidate the winner. If either no candidates remain or one remains, but with negative “N,” there is no winner.
6. Eliminate the candidate which has the lowest positive (or most negative) “N.” (If there should be a tie for lowest “N,” then eliminate the tied candidate which has the lowest “V.”) Unmark the “Best” “box” for any ballots which have selected the candidate being eliminated as “Best.” For any ballot on which the “Best” box is being unmarked and for which an “Alternate” is marked, change the “Alternate” candidate to “Best.” Go back to step 4.

### **NOTES (which apply for both BAWV and AADV):**

1. User-friendly electronic voting supervision could easily prevent spoiled ballots and therefore eliminate the need to check for and disqualify these during the tally process. Software (Election Manager) is available which can completely run elections (including touch screen voting) using BAWV, AADV or Plurality voting methods. The tally processes for both AADV and BAWV are completely automated.
2. It is possible, though unlikely, that there could be no winner; that is, no remaining candidate with a positive or zero N. (Candidates with such “high negatives” would simply not be nominated, especially if BAWV or AADV were used during the nominating process!) It would, of course, be easy to provide a rule to crown the “least awful” candidate the winner. But it doesn’t seem wise to elect a candidate that more people dislike than like. Therefore, if there should be no winner, another election should be held. No candidate that received a negative N should be allowed to run again. This is the equivalent of the common practice of always having the option to vote for NOTA (None Of The Above). It is a defect of Plurality, IRV, Approval, STAR, Score and virtually all other voting methods that they are unable to sensibly handle this situation (they will instead force the election of a candidate disliked by a majority of voters).
3. Because it is at least a possibility that all candidates on the ballot could be pretty “lackluster,” the winning net vote total could be fairly low (very sad). Conceivably, a write-in (or other obscure) candidate could then achieve a winning score. Therefore, it is required that a candidate must have received at least a “reasonable” amount of voter interest in order to qualify. Therefore, the total number of voters weighing in on each candidate (either for or against) is totaled. Any candidate is eliminated that has a total less than one voter plus one percent (rounded to the nearest voter) of the highest total that any single candidate received.