## Cycling : The Standard Example

|  | voter \#1 | voter \#2 | voter \#3 |
| :--- | :---: | :---: | :---: |
| first choice | $x$ |  |  |
| second choice | $y$ | $y$ | $z$ |
| third choice | $z$ | $z$ | $x$ |

## A Condorcet Winner

some policy is called a Condorcet winner if it defeats every other (single) policy in a (two-contestant) vote
ie : if there are 4 alternatives: $w, x, y, z$, then alternative $w$ is a Condorcet winner if at least half the voters prefer w to $x$, and at least half the voters prefer $w$ to $y$ and at least half the voters prefer w to $z$
so none of the 3 alternatives $x, y, z$ is a Condorcet winner in the standard example of cycling (on the previous page)

## another example

| voter \#1 | voter \#2 | voter \#3 | voter \#4 | voter \#5 |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| x | y | z | w | x |
| y | w | w | z | w |
| w | x | y | x | z |
| z | z | x | y | y |

in this example w is a Condorcet winner

