

Median voter theorem

TheoryGuru applications

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Load Economicreasoning package only if it is not already loaded

```
If[Length@Names["PLTools`*"] < 10,  
  Get["http://economicreasoning.com"]]
```

Setup

```
singlepeakedprefs = F[gL] < F[gR] ⇒ F[gL] < votesL < F[gR];
```

Voting rules

```
Lwins = votesL ≥ votesR;
```

```
Rwins = votesR ≥ votesL;
```

Definition of median

```
gLatmedian = F[gL] ==  $\frac{1}{2}$ ;
```

```
gRatmedian = F[gR] ==  $\frac{1}{2}$ ;
```

Theorem confirmed

```
TheoryGuru[{0 ≤ F[gL] < F[gR] ≤ 1, votesL + votesR == 1, singlepeakedprefs},  
  (gLatmedian ⇒ Lwins) &&  
  (gRatmedian ⇒ Rwins)]  
True
```

Variable interpretations