

#1 Plurality Method

Number of Voter	5	4	4	2	2
1 st	r	P	A	T	A

(P) Peter = 4

(T) Thomas = 2

(S) Sam = 5

(A) Alice = 4 + 2 = 6

~~Alice is not majority but~~
still win

Alice got the highest of
votes but not in the majority
but still a winner

#1 Plurality with Elimination Method

# of Voter	5	4	4	2	2
1 st	r	P	A	P	A
2 nd	P	r	r	A	P
3 rd	A	A	P	S	S

Peter (P) = 4 + 2 = 6

Thomas

Sam (S) = 5

Alice (A) = 4 + 2 = 6

# of Voter	5	4	4	2	2
1 st	P	P	A	P	A
2 nd	A	A	P	A	P

Peter (P) = 5 + 4 + 2 = 11

Alice (A) = 4 + 2 = 6

Peter got the highest number of votes and has
the majority of votes.

1 Borda Count Method

# of Voter	5	4	4	2	2
1 st (4)	S (20)	P (16)	A (16)	T (8)	A (8)
2 nd (3)	P (15)	T (12)	S (12)	P (6)	P (6)
3 rd (2)	A (10)	S (8)	T (8)	A (4)	S (4)
4 th (1)	T (5)	A (4)	P (4)	S (2)	T (2)

Summary point of each candidate:

$$\text{Peter (P)} = 16 + 15 + 6 + 6 + 4 = 47$$

$$\text{Thomas (T)} = 8 + 12 + 8 + 5 + 2 = 35$$

$$\text{Sam (S)} = 20 + 12 + 8 + 4 + 2 = 46$$

$$\text{Alice (A)} = 16 + 8 + 10 + 4 + 4 = 42$$

Using Borda Count Peter is the winner.

1 Pair Wise Comparison Voting Method

# of Voter	5	4	4	2	2
1 st	S	P	A	T	A
2 nd	P	T	S	P	P
3 rd	A	S	T	A	S
4 th	T	A	P	S	T

Head to Head

Pairs	A vs P	A vs S	A vs T	P vs S	P vs T	S vs T
	4 5 2 4 2	4 5 2 4 2	3 4 4 2 2	4 5 2 4 2	3 4 4 2 2	5 4 4 2 2
Total	6 11	8 9	11 6	8 9	11 6	11 6
Winner	P	S	A	S	P	S

$$\text{Peter (P)} = 2$$

$$\text{Thomas (T)} = 0$$

$$\text{Sam (S)} = 3$$

$$\text{Alice (A)} = 1$$

2 Plurality Method

# of voter	15	25	30	10	
1st	C	L	L	C	
2nd	A	C	C	M	
3rd	M	A	M	A	
4th	L	M	A	L	

$$\text{Latte (L)} = 25 + 30 = 55$$

$$\text{Cappuccino (C)} = 15 + 10 = 25$$

$$\text{Mocha (M)} = 0$$

$$\text{Americano (A)} = 0$$

Latte got the highest number of voter and has the majority of voter.

Plurality with Elimination Method

# of voter	15	25	30	10	
1st	C	L	L	C	
2nd	L	C	C	L	

$$\text{Latte (L)} = 25 + 30 = 55$$

$$\text{Cappuccino (C)} = 15 + 10 = 25$$

Latte got the highest number of voter and has the majority of voter.

2 Borda Count Method

# of Voters	15	25	30	10
1st(A)	C(60)	L(100)	L(120)	C(40)
2nd(S)	A(45)	C(75)	C(90)	M(20)
3rd(2)	M(30)	A(50)	M(40)	A(20)
4th(1)	L(15)	M(25)	A(30)	L(10)

$$L = 100 + 120 + 15 + 10 = 245$$

$$C = 60 + 40 + 75 + 90 = 265$$

$$M = 20 + 30 + 40 + 25 = 115$$

$$A = 45 + 50 + 20 + 30 = 145$$

Using Borda Count Cappuccino is the winner

2 Pair Wise Comparison Rating Method

# of Voters	15	25	30	10
1st	C	L	L	C
2nd	A	C	C	M
3rd	M	A	M	A
4th	L	M	A	L

Head to Head

Pair	A vs C	A vs L	A vs M	C vs L	C vs M	L vs M
	15 25 20 10	15 25 10 30	15 30 25 10	15 25 10 30	15 25 30 10	25 15 30 10
Total	6 80	25 55	40 40	25 55	80 0	55 25
	C	L	A, M	L	C	L

$$L = 3$$

$$C = 2$$

$$M = 1$$

$$A = 1$$

Latte is the winner

#3 Plurality Method

Place	# of Voters		
	13	12	10
1 st	A	C	D
2 nd	B	B	A
3 rd	D	D	B
4 th	C	A	C

$$\begin{aligned}
 A &= 13 \\
 B &= 0 \\
 C &= 12 \\
 D &= 10
 \end{aligned}$$

Using (Plurality) Plurality Method Brand A is the winner //

#3 Plurality with Elimination

Place	# of Voters		
	13	12	10
1 st	A	C	D
2 nd	D	D	A
3 rd	C	A	C

$$\begin{aligned}
 A &= 13 \\
 D &= 10 \\
 C &= 12
 \end{aligned}$$

Place	# of Voters		
	13	12	10
1 st	A	C	A
2 nd	C	A	C

$$A = 13 + 10 = 23 //$$

$$C = 12$$

Using Plurality with Elimination the Brand A is the winner //

3 Borda Count Method

Place	# of Voters		
	13	12	10
1 st (4)	A (32)	C (48)	D (40)
2 nd (8)	B (37)	B (36)	A (20)
3 rd (2)	D (26)	D (24)	B (20)
4 th (1)	C (13)	A (12)	C (10)

$$A = 32 + 12 + 30 = 74$$

$$B = 37 + 36 + 20 = 93$$

$$C = 13 + 48 + 10 = 71$$

$$D = 26 + 24 + 40 = 90$$

Using Borda Count Brand B is the winner

4 Pair Wise Comparison Voting Method

Place	# of Voters		
	13	12	10
1 st	A	C	D
2 nd	B	B	A
3 rd	D	D	B
4 th	C	A	C

Head to Head

Pair	A vs B	A vs C	A vs D	B vs C	B vs D	C vs D
	13 10	13 10	13 10	13 10	13 12	12 13 10
Total	23 12	23 12	13 22	23 12	25 10	12 23
Winner	A	A	D	B	B	D

Using a pair wise Comparison Voting Method Brand A, B, D are the winners

#1 Plurality Method

Place	Number of Voters			
	130	120	100	150
1st	P	T	T	S

$$P = 130$$

$$T = 120 + 100 = 220$$

$$P = 0$$

$$S = 150$$

Using Plurality Method Candidate T is the winner

#2 Plurality Elimination Method

Place	Number of Voters			
	130	120	100	150
1st	P	T	T	S
2nd	S	S	P	P
3rd	T	P	S	T

$$P = 130$$

$$T = 120 + 100 = 220$$

$$S = 180$$

Place	# of Voters			
	130	120	100	150
1st	S	T	T	S
2nd	T	S	S	T

$$T = 120 + 100 = 220$$

$$S = 130 + 150 = 280$$

Using Plurality with Elimination Candidate S is the winner

#9 Borda Count Method

Place	# of Voters			
	30	20	100	150
1 st (4)	P (50)	T (180)	T (400)	S (600)
2 nd (3)	R (30)	R (260)	R (300)	R (450)
3 rd (2)	S (260)	S (240)	P (200)	P (300)
4 th (1)	T (120)	P (120)	S (100)	T (150)

$$P = 50 + 200 + 300 + 120 = 1,140$$

$$T = 450 + 400 + 120 + 150 = 1,160$$

$$R = 300 + 360 + 300 + 450 = 1,500$$

$$S = 600 + 260 + 240 + 100 = 1,200$$

Using the Borda Method Candidate R is the winner

#4 Pair Wise Comparison Voting Method

Place	# of Voters			
	30	120	100	150
1 st	P	T	T	S
2 nd	R	R	R	R
3 rd	S	S	P	P
4 th	T	P	S	T

Head to Head

Pairs	P vs R	P vs S	P vs T	R vs S	R vs T	T vs S
	130 120 100 100 150	130 120 100 150	130 120 150 100	130 150 120 100	130 120 150 100	120 130 100 150
Total	30 370	230 270	280 230	450 150	280 220	230 280
Winner	R	S	P	R	R	S

$$P = 1$$

$$T = 0$$

$$R = 3$$

$$S = 1$$

Using the Pair Wise Comparison Voting Method Candidate R is the winner

5 Plurality Method

Place	# of Points		
	1st	2nd	3rd
1st	B	A	A
2nd	A	C	B
3rd	C	B	C

Place	# of Points		
	1st	2nd	3rd
1st	B	A	A

$$A = 5 + 10 = 15$$

$$B = 15$$

$$C = 10$$

Using Plurality Method it shows that fast food A and B are the best fast food burger sellers.

5 Elimination Plurality Method

Place	# of Points		
	1st	2nd	3rd
1st	B	A	A
2nd	A	B	B

$$A = 5 + 10 = 15$$

$$B = 15$$

Using Plurality Method it shows that fast food A and B are the best fast food burger sellers.

#3 Borda Count Method

Place	# of Points		
	1st	2nd	3rd
1 st (3)	B (45)	A (15)	A (30)
2 nd (2)	A (30)	C (10)	B (20)
3 rd (1)	C (15)	B (5)	C (10)

$$A = 15 + 30 + 30 = 75$$

$$B = 45 + 20 + 5 = 70$$

$$C = 10 + 15 + 10 = 35$$

Using Borda Count it shows that the fast food who sells the best burger is the fast food

A.

#5 Pair Wise Comparison Voting Method

Place	# of Points		
	1st	2nd	3rd
1 st	B	A	A
2 nd	A	C	B
3 rd	C	B	C

Head to head

Pair	A vs B	A vs C	B vs C
	5 15 10	15 5 10	15 5 10
Total	15 15	30	25 5
Winner	A & B	A	B

$$A = 2$$

$$B = 2$$

$$C = 0$$

Using Pair Wise Comparison

Voting Method the fast food

that sells the best burger is fast food A and B