Check Your Understanding
Voting – Plurality, Majority, Elimination, Borda, Condorcet

The table below identifies some key concepts from this unit. Complete each question, check your answers, and get help as needed.

Key Concepts	Basic Questions	Intermediate Questions	Advanced Questions
Majority	1a	2a, 3	
Plurality	1b	2b, 5	
Majority with Elimination		2c, 4, 5	
Borda Count	1c	2d, 5	

1) PWHS students are planning a class trip. They will either go to Morocco, Japan, Brail, or Egypt. To determine the destination, all 200 students who are interested in going on the trip vote for their destination preference. The results are presented in the table below.

	110	75	5	10
1st	Morocco	Brazil	Egypt	Japan
2nd	Japan	Japan	Brazil	Brazil
3rd	Brazil	Egypt	Morocco	Egypt
4th	Egypt	Morocco	Japan	Morocco

Determine the winning location using each of the following methods:
  a) Majority
  b) Plurality
  c) Borda Count

2) The results of an election between 4 candidates (A, B, C, D) are given in the table below.

	225	140	125	160	350	200
1st	C	B	A	B	C	D
2nd	A	D	B	A	D	B
3rd	D	A	D	D	A	A
4th	B	C	C	C	B	C

Determine the winning candidate using each of the following methods:

a) Majority
b) Plurality
c) Majority with Elimination
d) Borda Count

3) The results of an election are presented in the table below. Using majority, which option would win?

	5	13	20	12
1st	C	B	A	B
2nd	B	A	C	C
3rd	A	C	B	A

4) The results of an election are presented in the table below. Using majority with elimination, which option would win?

	2	6	4	1	5	7
1st	A	D	C	A	C	B
2nd	B	A	A	D	D	A
3rd	C	B	B	C	B	D
4th	D	C	D	B	A	C

5) The grad committee will be selling hoodies to the 240 graduating students. Three colours have been proposed for the hoodies: black, red, and green.

The grad committee asked the students to rank these colours in order of preference. The results of the vote are shown in the table below.

	1/3 of the students	10% of the students	?	15% of the students
1st	Black	Red	Green	Black
2nd	Red	Green	Red	Green
3rd	Green	Black	Black	Red

After analyzing the results of the vote, the students were told that the chosen colour was green.
Pamela, Erin, Brandon, and Charlie made the following claims:
- Pamela thinks that the colour was chosen using plurality
- Erin thinks that the colour was chosen using majority with elimination
- Brandon thinks that the colour was chosen using Borda Count

Which of the students were correct (more than one student may be correct)

Answer Key

1) a) Majority: Morocco b) Plurality: Morocco c) Borda: Japan

2) a) Majority: no winner b) Plurality: C c) Elimination: B d) Borda: D e) Condorcet: D

3) No winner

4) B

5) Erin, Brandon, and Charlie are all correct. Pamela is incorrect (black wins with plurality)