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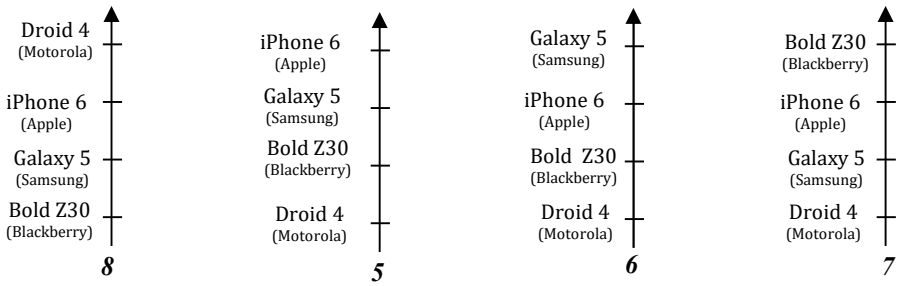
AMDM: Unit 2 – Matrices
2.5 – Voting Methods Practice – May 7

Consider the following preference schedules for an election.



1. How many preference schedules are possible (if ties are not permitted)? #1)

2. Who is the **plurality winner**?

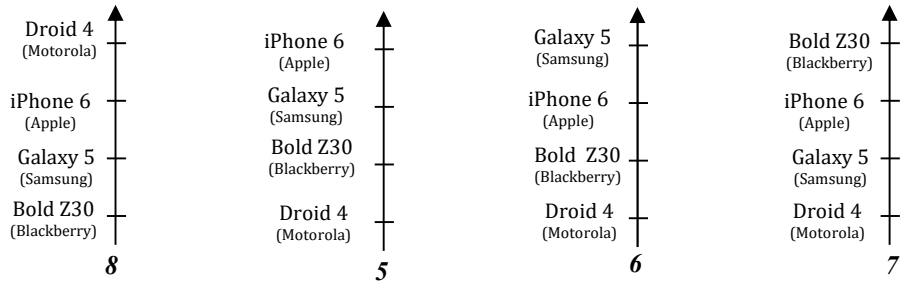
   What is the percentage of 1st place votes each received? #2)

3. How many first place votes would be needed in this example for there to be a **majority winner**? #3)

   If there is a **majority winner** who is it? #3)

4. Who is the **'run off' winner**? #4)

5. Who is the **'sequential run off' winner**? #5)



6. What is each candidates Borda count?

   #6)
   Droid:
   iP6:
   Glxy5:
   Z30:

   Who is the **'Borda Count' winner**?

   Demonstrate how this can be done with matrix multiplication*

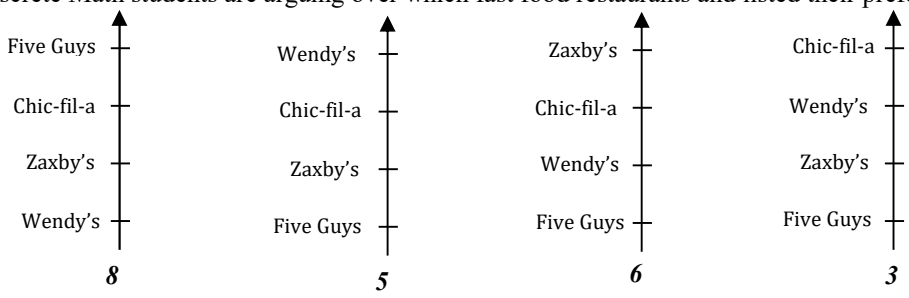
   #6)

7. What is each candidates Condorcet winner?

   #7)

⇨	Drd	iP6	G5	Z30
Drd	*			
iP6		*		
G5			*	
Z30				*

Twenty-two Discrete Math students are arguing over which fast food restaurants and listed their preferences below.



1. In your own words, give a description of the **plurality winner**

What percentage of 1st place votes does each of the following choices have?

Choice	Five Guys	Chic-fil-a	Zaxby's	Wendy's
Percentage of 1st place votes				

Who is the **plurality winner**?

2)

2. a. What is the minimum number of first place votes needed in this example for there to be a **majority winner**?

#3a)

b. If there is a **majority winner** who is it?

#3b)

3. In your own words, give a description of the **'run off' winner** :

Who is the **'run off' winner**?

#4)

4. In your own words, give a description of the **'sequential run off' winner** :

Who is the **'sequential run off' winner**?

5)

5. In your own words, give a description of the **'Borda Count' winner** (on a separate page show how this might be done using Materices):

a. Give the Borda Count for each letter:

#6a) 5G: C: Zx: W:

b. Who is the **'Borda Count' winner**?

#6b)

6. Determine the Condorcet Winner.

→	5G	C	Zx	W
5G	*			
C		*		
Zx			*	
W				*