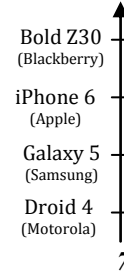
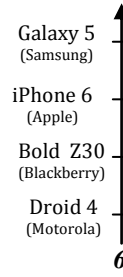
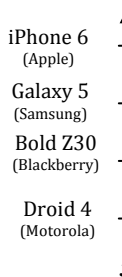
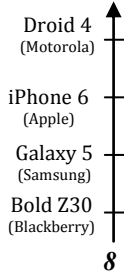


Consider the following preference schedules for an election.



- How many preference schedules are possible (if ties are not permitted)?
- Who is the **plurality winner**?  
What is the percentage of 1<sup>st</sup> place votes each received?
- How many first place votes would be needed in this example for there to be a **majority winner**?  
  
If there is a **majority winner** who is it?
- Who is the **'run off' winner**?
- Who is the **'sequential run off' winner**?

#1)

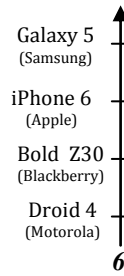
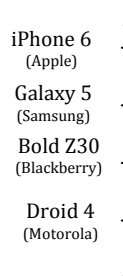
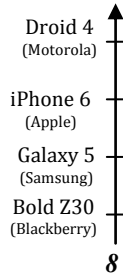
#2)

#3)

#3)

#4)

#5)



- What is each candidates Borda count?

#6)

Droid:

iP6:

Glxy5:

Z30:

#6)

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

\*\*\*Demonstrate how this can be done with matrix multiplication\*\*\*\*

- What is each candidates Condorcet winner?

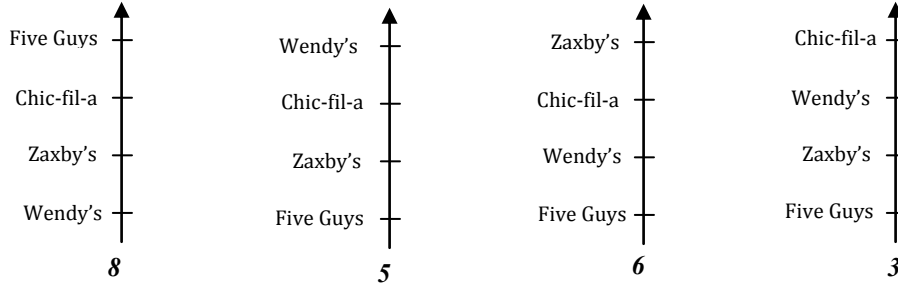
#7)

⇒	Drd	iP6	G5	Z30
Drd	*			
iP6		*		
G5			*	
Z30				*

**The BIG QUESTION:  
WHO REALLY WINS?**

SUPPORT YOUR REASONING.

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 1<sup>st</sup> place votes does each of the following choices have?

Choice	Five Guys	Chic-fil-a	Zaxby's	Wendy's
Percentage of 1 <sup>st</sup> 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** :

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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 Matrices):

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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.

→	<b>5G</b>	<b>C</b>	<b>Zx</b>	<b>W</b>
<b>5G</b>	*			
<b>C</b>		*		
<b>Zx</b>			*	
<b>W</b>				*