Mathematics for College Liberal Arts
Unit 8 Project
Statistics

Instructions: Answer **ALL** questions. You **MUST** show all calculations and/or explanations to justify your answers. Upload the completed project as a Word or PDF file.

1.   A sample of donations to a blood bank contained these blood types:

A	O	A	O	A	A	AB	O
O	A	AB	A	O	O	A	A
O	O	B	O	B	O	O	O
B	A	O	A	O	O	A	A

From the chart above, create:

a.   A frequency distribution for the data.

b.   A bar chart to visualize the data.

2.   Decide whether randomization is being used in the selection of these samples. If it is, identify the type of random sample (simple, systematic, cluster, or stratified).

a.   A vinyl record dealer is trying to price a large collection she's thinking of buying. She looks at every tenth record on the shelf and notes the value.

b.   A court clerk is charged with identifying one hundred people for a jury pool for upcoming legal hearings. He has an alphabetized list of registered voters in his jurisdiction, so he uses a random number generator to pick one hundred names from the list.

c.   A state agricultural officer is worried about the spread of a parasitic disease among cattle. He chooses 30 cattle farms at random and tests each cow on those 30 farms for the disease.

3.   Answer the following about data that are distributed normally with mean 50 and standard deviation 5:

a.   What proportion of the data are between 35 and 65?

b.   What's the standardized score of the data value 37?

c.   At what percentile would the data value 58 fall?

d.   What data value would be at the 40th percentile?

4.   The table below shows the number of players on the rosters of each English Premier League team.

Team	Active Players	Team	Active Players
Manchester United F.C.	27	Newcastle United F.C.	28
Manchester City F.C.	24	Aston Villa F.C.	24
Chelsea F.C.	25	Fulham F.C.	27
Arsenal F.C.	28	Southampton F.C.	24
Tottenham Hotspur F.C.	27	Wolverhampton Wanderers F.C.	22
Liverpool F.C.	30	Brighton & Hove Albion	31
Crystal Palace	29	Burnley F.C.	22
Everton F.C.	23	West Bromwich Albion F.C.	26
Leicester City	25	Leeds United F.C.	25
West Ham United F.C.	24	Sheffield United F.C.	27

Find the

a.   Mode

b.   Median

c.   Mean