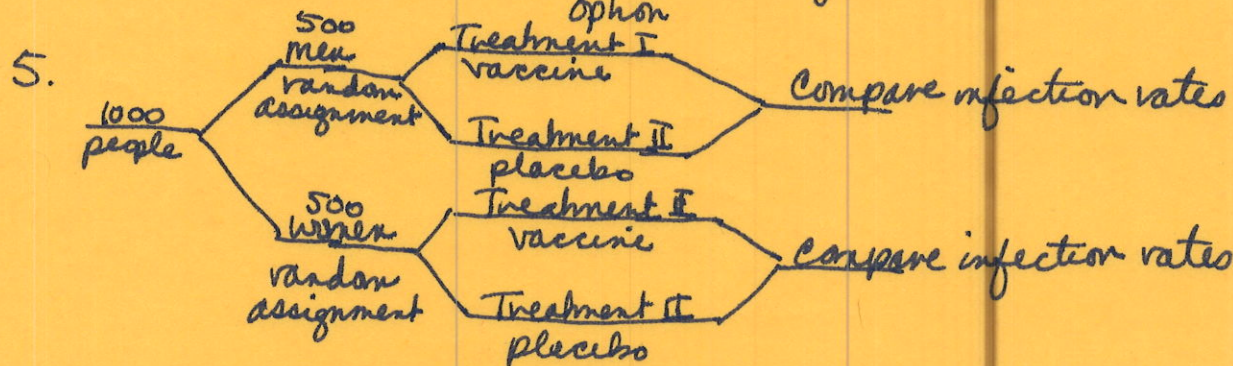
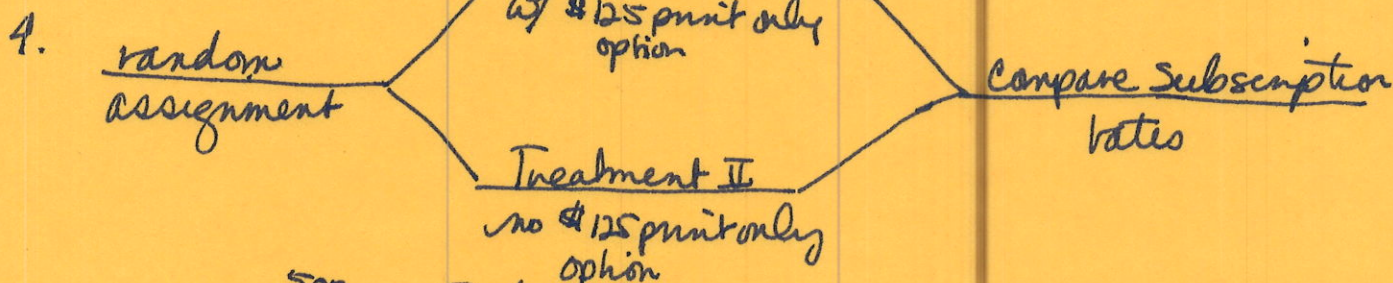
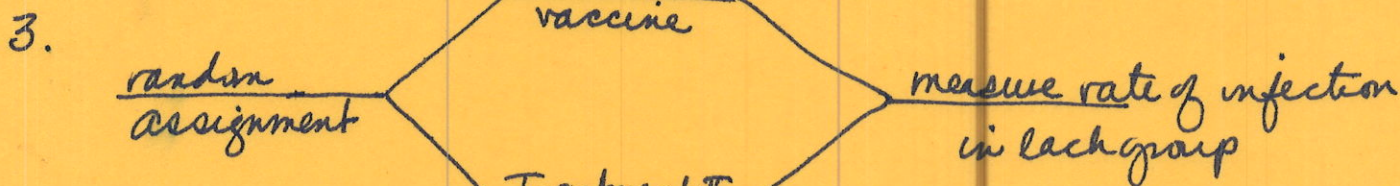


MAT 223 Homework # 2 Key

- 1a. Stratified sampling
- b. systematic sampling
- c. probability sample
- d. mixed - not pure cluster sampling
- e. convenience sample

2. block design



6.

Category	Frequency
Ballet	3
Cycling	1
Basketball	3
Track	3
Baseball/Softball	3
Swimming	7
Soccer	4
Total	24

7. Consider the data in the table below. Find the minimum and maximum values, and use that to determine the classes if we want to divide the data up into 8 classes. After calculating each class boundary, construct a frequency table. Complete the table below.

82	81	80	83	86	76	72	86	79	96
73	75	71	61	76	84	84	84	93	75
80	71	89	94	86	82	90	76	79	79
88	73	73	68	85	86	70	74	86	95
86	92	81	105	88	73	78	62	85	90

Class	Tallies	Frequency
61-66	||	2
67-72	||||	5
73-78	|||||	11
79-84	|||||	13
85-90	|||||	13
91-96	||||	5
97-102		0
103-108	|	1

Be sure the total in your frequency column adds up to 50.

$$\frac{105 - 61}{8} = 5.5 \Rightarrow 6$$

8. You've recorded the year each car was made that drove past a particular intersection in one hour, and constructed the following frequency table.

Year	Frequency	Cumulative Frequency	Relative Frequency (Reduced Fraction)	Relative Frequency (Decimal, 4 places)	Relative Frequency (Percent, hundredths)	Relative Cumulative Frequency (Percent)
Pre-2012	75	75	$\frac{5}{16}$	.3125	31.25%	31.25%
2012	24	99	$\frac{1}{10}$	.1	10%	41.25%
2013	43	142	$\frac{43}{240}$	.1792	17.92%	59.17%
2014	36	178	$\frac{3}{20}$	.15	15.0%	74.17%
2015	29	207	$\frac{29}{240}$	.1208	12.08%	86.25%
2016	28	235	$\frac{7}{60}$	.1167	11.67%	97.92%
2017	5	240	$\frac{1}{48}$	.0208	2.08%	100%
Total	240					