# Questions on 9.3? Probability Quiz today...

9.1, 9.2, 9.3

9.4 Visualizing with Venn
A Solidify Understanding Task

One of the attributes of Venn diagram's is that it can be easy to see the relationships within the data. In this task, we will create multiple Venn diagrams using data and determine the events that create diagrams to either have an intersection or for them to be mutually exclusive.
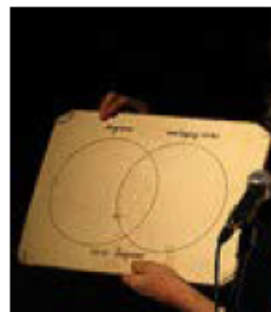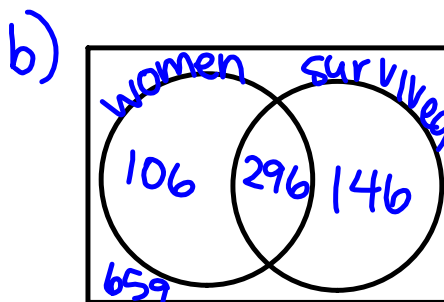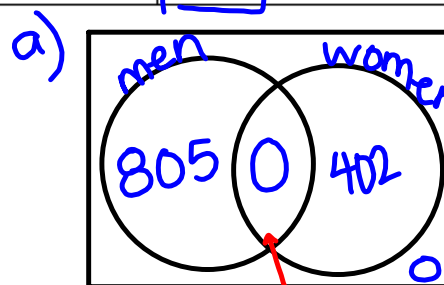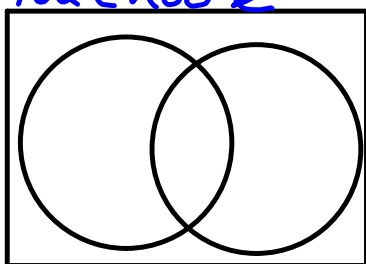
1. The following data represents the number of men and women passengers aboard the titanic and whether or not they survived.

	Survived	Did not survive	Total
Men	146	659	805
Women	296	106	402
Total	442	765	1207

2. Create three Venn diagrams with this data.
   a. Men vs Women
   b. Women vs Survived
   c. You choose the conditions

a)

men   women

805 (0) 402

0

↳ mutually exclusive events can't happen at the same time.

c) You choose

b)

women   survived

106 (296) 146

659

3. Create two probability statements using each of your Venn diagrams from question 2.

a) $P(M) = \frac{805}{1207} =$

$P(W) = \frac{402}{1207} =$

b) $P(NS|M) = \frac{659}{805} =$

$P(NS|W) = \frac{106}{402} =$

c)

May 19-8:56 AM

4. Create and label three different Venn diagrams using this data. Create at least one that is mutually exclusive and at least one that has an intersection.
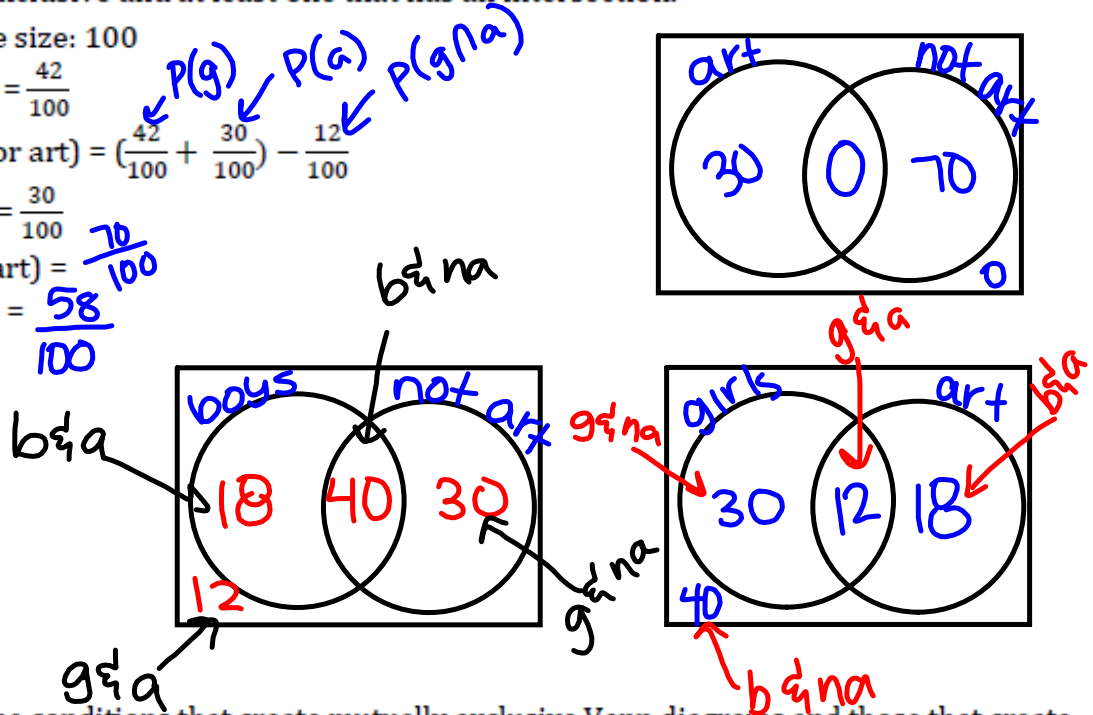
Sample size: 100

$P(\text{girl}) = \frac{42}{100}$

$P(\text{girl or art}) = (\frac{42}{100} + \frac{30}{100}) - \frac{12}{100}$ $P(g)$ $P(a)$ $P(g \cap a)$

$P(\text{art}) = \frac{30}{100}$

$P(\text{not art}) = \frac{70}{100}$

$P(\text{boy}) = \frac{58}{100}$

art   not art   30   0   70   0

boys   not art   b & na   b & a   18   40   30   12   g & na   g & a

girls   art   g & na   g & a   b & a   30   12   18   40   b & na

5. Describe the conditions that create mutually exclusive Venn diagrams and those that create intersections.

mutually exclusive when two events cannot happen at the same time; intersections when the two events can happen at the same time.

6. What conjecture can you make regarding the best way to create a Venn diagram from data to highlight probabilities?

create Venn diagrams with intersections.

Homework

Finish 9.4 "Ready, Set, Go"

Mar 28-9:36 AM