Day 3: Two Way Tables and Venn Diagrams Date: _____

Now that we have practiced two way tables we can construct our own two way tables when given certain key information.

1. Fill in the blanks on Wolverines two-way table of people he knows.

WOLVERINES TABLE

	Mutant	Human	TOTAL
Good	27	43	70
Bad	84	9	93
TOTAL	111	52	163

Use the table to find the following:

2. $P(mutant) = \frac{111}{163} = 68.1\%$ Marginal

3. $P(good \cap human) = \frac{43}{163} = 26.4\%$ Joint

4. $P(bad) = \frac{93}{163} = 57.1\%$ Marginal

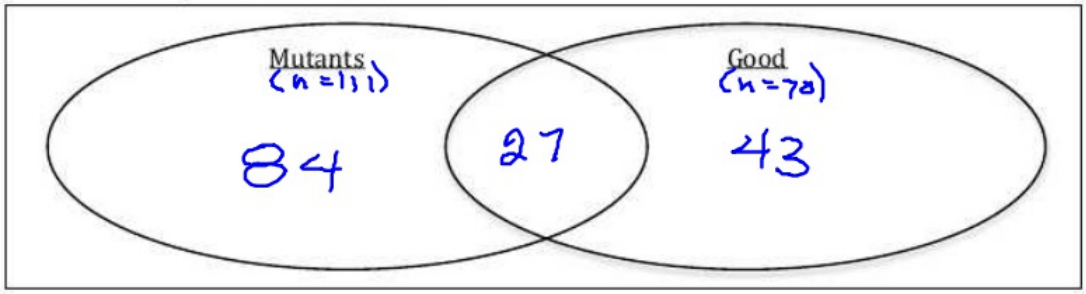
5. $P(mutant \cup bad) = \frac{27+84+9}{163} = \frac{120}{163} = 73.2\%$ Joint

6.. $P(human^c) = \frac{111}{163} = 68.1\%$ Marginal

$P(human) = \frac{52}{163}$

7. $P(good|human) = \frac{good}{human} = \frac{43}{52} = 82.7\%$ Conditional

8. Make a Venn diagram of the information.



Thor's been too busy defending Asgard to create a two-way table. Using the information below, complete one for him and answer the questions below.

Thor fought 100 aliens and humans, both male and female. He fought 68 aliens in total, 49 of which were male. He fought 23 females in total.

THORS TABLE

	Aliens	**Humans**	**TOTAL**
Male	49	28	77
Female	19	4	23
TOTAL	68	32	100

Find each of the following probabilities using your two-way table.

9. $P(alien \cap female) = \frac{19}{100} = 19\%$ Joint

10. $P(male^c) = \frac{23}{100} = 23\%$ marginal
$P(male) = \frac{77}{100}$

11.. $P(male \cup human) = \frac{49+28+4}{100} = \frac{81}{100} = 81\%$ Joint

12. $P(female \cup human)^c = \frac{49}{100} = 49\%$ Joint
$P(fem \cup hum) = \frac{19+4+28}{100} = \frac{51}{100}$

13. $P(alien) = \frac{68}{100} = 68\%$ marginal

14. $P(male|human) = \frac{28}{32} = 87.5\%$ Conditional

15. Make a Venn diagram of the information.