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Mr. Schlansky

Date _____
Algebra II

Creating/Using Two Way Frequency Tables

1. In a class of 30 students, there are 16 girls and there are 12 honors students. If there are 10 honor students that are girls, create a two way frequency table to represent this situation.

What is the probability that a student is not an honors student given that they are a girl?

	girls	not girls	total
honors	10	2	12
not honors	6	12	18
total	16	14	30

$\frac{6}{16}$

2. There are a total of 160 doctors in a city. There are 75 female doctors and 25 pediatricians. There are 20 female pediatricians.

Construct a two-way frequency table for this situation.

What is the probability that a doctor is a female given that they are a pediatrician? $\frac{20}{25}$

What is the probability that a doctor is a pediatrician given that they are female? $\frac{20}{75}$

	female	not female	
Pediatrician	20	5	25
not Pediatrician	55	80	135
	75	85	160

3. The guidance department has reported that of the senior class, 2.3% are members of key club, K, 8.6% are enrolled in AP Physics, P, and 1.9% are in both. Determine the probability of P given K, to the *nearest tenth of a percent*. The principal would like a basic interpretation of these results. Write a statement relating your calculated probabilities to student enrollment in the given situation.

$\frac{1.9}{2.3} = .826 \cdot (100)$

82.6%

	K	not K	
P	1.9	6.7	8.6
not P	.4	91	91.4
	2.3	97.7	100

100 is always the total for percents

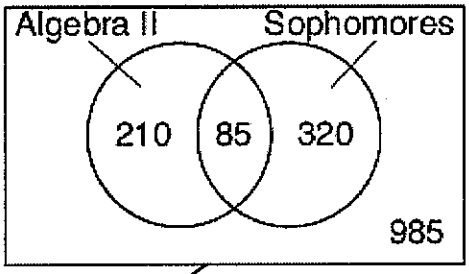
82.6% of the Seniors in Key Club are in AP Physics.

4. A study was designed to test the effectiveness of a new drug. Half of the volunteers received the drug. The other half received a sugar pill. The probability of a volunteer receiving the drug and getting well was 40%. What is the probability of a volunteer getting well, given that the volunteer received the drug?

	drug	not drug	
well	40		
not well	10		
	50	50	100

$\frac{40}{50}$

5. Data for the students enrolled in a local high school are shown in the Venn diagram below. Create a two way frequency table to represent this situation.
If a student from the high school is selected at random, what is the probability that the student is a sophomore given that the student is enrolled in Algebra II?



$\frac{85}{295}$

	AII	not AII	
Soph	85	320	405
Not Soph	210	985	1195
	295	1305	1600

6. In a local high school, the probably that a student passes the Algebra II Regents is 82% and the probably that a student passes Chemistry Regents is 74%. If the probably that a student passes neither exam is 18%, find the probability that a student passes the Chemistry Regents only.

	AII	not AII	
Chem	74	0	74
Not Chem	8	18	26
	82	18	100

$\frac{0}{100} = 0$

7. Out of 29 students in a Geometry class, 19 came to a 6-hour review class in June. 16 of the students who attended the review session passed the Regents. If 20 students passes the Regents, how much more likely was it that a student who took the review class passed the Regents than a student that did not take the review class. Round your answer to the nearest percent.

84-40=44%

	Review	No Review	
Pass	16	4	20
No Pass	3	6	9
	19	10	29

took review class passed

$\frac{16}{19} = 84\%$

not take review class passed

$\frac{4}{10} = 40\%$

8. There are 84 athletes on a Track and Field team. 68 are sprinters and 14 are jumpers. If 10 athletes neither sprint nor jump, what is the probability that a sprinter is a jumper? Round your answer to the nearest tenth of a percent.

	sprint	not sprint	
jump	8	6	14
not jump	60	10	70
	68	16	84

$\frac{8}{68} = .1176...$

11.8%