REGENTS PROBLEM SET:

1. A survey about television-viewing preferences was given to randomly selected freshmen and seniors at Fairport High School. The results are shown in the table below.

Favorite Type of Program

	Sports	Reality Show	Comedy Series
Senior	83	110	67
Freshman	119	103	54

A student response is selected at random from the results. State the ***exact*** probability the student response is from a freshman, ***given*** the student prefers to watch reality shows on television.

Freshman and Prefer Reality TV/Prefer Reality TV → 103/213

2. 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*.

	Members of Key Club	Not a Member of Key Club	Total
Enrolled in AP Physics	1.9	6.7	8.6
Not Enrolled in AP Physics	.4	91	91.4
Total	2.3	97.7	100

P(K and P)/P(k) → 1.9/ 2.3 → .8

3. Data collected about jogging from students with two older siblings are shown in the table below.

	Neither Sibling Jogs	**One Sibling Jogs**	**Both Siblings Jog**
Student Does Not Jog	1168	1823	1380
Student Jogs	188	416	400

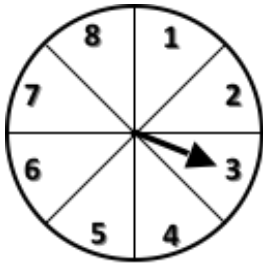
Using these data, determine whether a student with two older siblings is more likely to jog if one sibling jogs or if both siblings jog. Justify your answer.

Jogs given 1 sibling jogs → 416/(1823 + 416) → 416/2239 → .18579723
Jogs given both siblings job → 400/(1380 + 400) → 400/1780 → .2247191
Using this data, a student with both siblings who jog is more likely to jog as well.

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?

P(W and R)/R → 40/50 → .8 or 80 percent

SUMMARY: A spinner is spun around a circle that is divided up into eight equally sized sectors. What is more likely: getting a multiple of four **given** we spun an even or getting an odd, **given** we spun a number greater than 2? Support your answer.



getting a multiple of four **given** we spun an even → 2/4 → 1/2
Multiple of Four → {4, 8}
Even → {2, 4, 6, 8}

getting an odd, **given** we spun a number greater than 2 → 3/6 → 1/2
getting an odd → {1, 3, 5, 7}
number greater than 2 → {3, 4, 5, 6, 7, 8}

Equally likely, both have a probability of 1/2