CONTINGENCY TABLES HOMEWORK.

The table below shows a random sample of musicians and how they learned to play their instruments. The experiment is to choose one of these musicians at random. Use the provided data to answer the following questions.

Gender	**Self-taught**	**Studied in School**	**Private Instruction**	**Total**
Female	12	38	22	72
Male	19	24	15	58
Total	31	62	37	130

1. Find P(musician is a female).

2. Find P(musician is self-taught).

3. Find P(musician is a male who studied in school)

4. Find P(musician is a female or had private instruction)

5. Are the events *Self-taught* and *Female* mutually exclusive? Why or why not?

6. Are the events *Studied in school* and *Private instruction* mutually exclusive? Explain.

Use the information in the table below to answer the following exercises. The table shows the political party affiliation of each of 67 members of the US Senate in June 2012, and when they are up for reelection. The experiment is to choose one senator at random.

Up for reelection	**Democratic Party**	**Republican Party**	**Other**
November 2014	20	13	0
November 2016	10	24	0

7. What is the probability that the senator has an "Other" affiliation?

8. What is the probability that the senator is up for reelection in November 2016?

9. What are the chances that the senator is a Republican or is up for reelection in November 2014?

10. What are the chances that the senator is a Democrat and up for reelection in November 2016?

11. What is the probability that the senator is not up for reelection in November 2016?

12. Are the events *Democratic Party* and *November 2014* mutually exclusive? Why or why not?

13. Are the events *Other* and *November 2014* mutually exclusive? Explain.

The table below identifies a group of children by one of four hair colors, and by type of hair. The experiment consists in choosing one of these children at random. Use this information to answer the following questions.

Hair Type	**Brown**	**Blond**	**Black**	**Red**	**Totals**
Wavy	20		15	3	43
Straight	80	15		12	
Totals		20			215

14. Complete the table.

15. What is the probability that the child will have wavy hair?

16. What is the probability that the child will have either brown or blond hair?

17. What is the probability that the child will have wavy brown hair?

18. What is the probability that the child will not have brown hair?

ANSWERS.

1. 0.5538462

3. 0.1846154

5. They are not mutually exclusive because they have 12 outcomes in common.

7. 0

9. 0.8507463

11. 0.4925373

13. They are mutually exclusive because they have zero outcomes in common.

15. 0.2

17. 0.09302326