

Venn Diagrams

1.) The international club at a school has 105 members, many of whom speak multiple languages. The most commonly spoken languages in the club are English, Spanish and Chinese.

51 students speak Spanish

11 students speak Spanish and Chinese

26 students speak Chinese

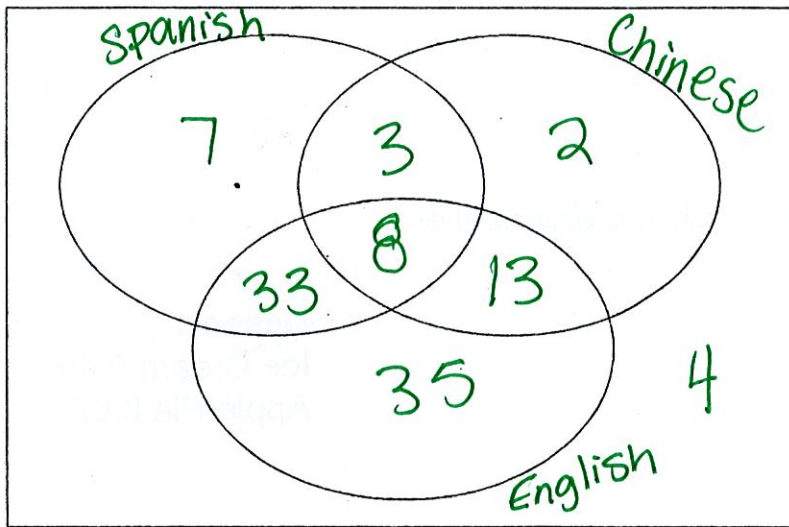
21 students speak Chinese and English

89 students speak English

41 students speak Spanish and English

8 students speak all 3

a.) Fill in the Venn diagram based on the situation. Make sure you label everything.



b.) How many students do not speak English, Spanish, or Chinese? 4

c.) Find $P(\text{student speaks Spanish and English but not Chinese})$. $\frac{33}{105}$

d.) Find $P(\text{student speaks just Chinese})$. $\frac{2}{105}$

e.) Given that the student speaks Chinese, what is the probability that they speak English? $\frac{21}{26}$

f.) Given that the student speaks English and Spanish, what is the probability that they also speak Chinese? $\frac{8}{41}$

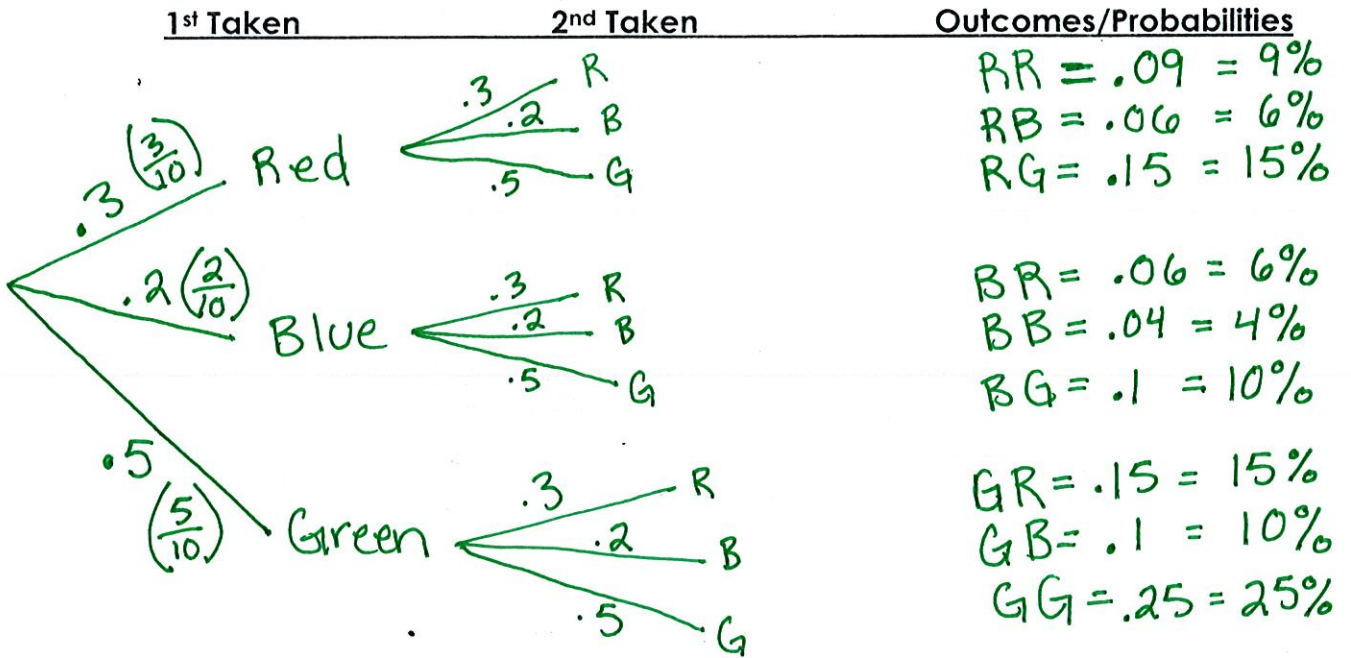
g.) Given that the student does not speak English, what is the probability that they speak Spanish?

$$\frac{10}{16} = \frac{5}{8}$$

key

Tree Diagrams

2. Ten beads in a bag – 3 Red, 2 Blue, 5 Green. One taken, returned to bag, then a second taken.



3. Choose a meal and apply the probabilities.

Main course

- Salad 0.2
- Fish & Chips 0.5
- Pizza 0.3

Dessert

- Ice Cream 0.45
- Apple Pie 0.55

