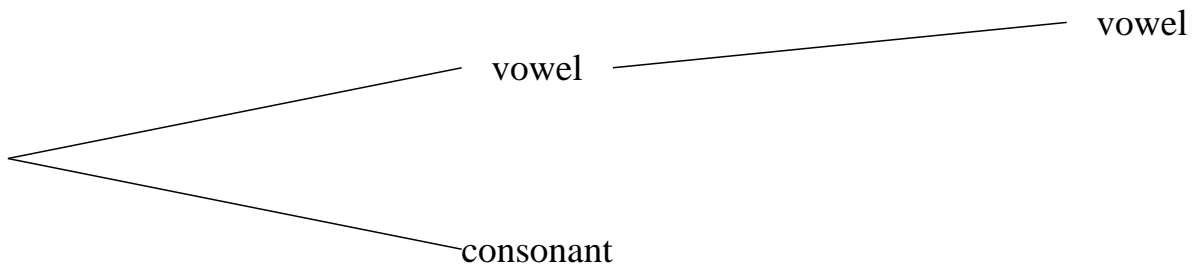


Name:

Class/Set:

Tree Diagrams (Conditional)

- 1: A bag contains 10 counters with the letters of the word STATISTICS written on them. A counter is chosen at random and **not replaced** before choosing another one. Complete this tree diagram and hence answer the following:

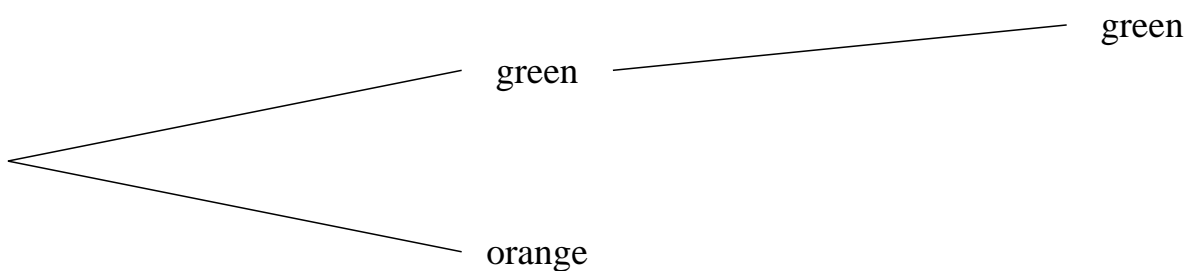


- a) What is the probability of getting two consonants?

- b) What is the probability of getting vowel at least once?

- c) What is the probability of getting exactly one vowel?

- 2: A drawer contains 8 green socks and 2 orange socks. A sock is chosen at random and **not replaced** before choosing another one. Complete this tree diagram and hence answer the following:

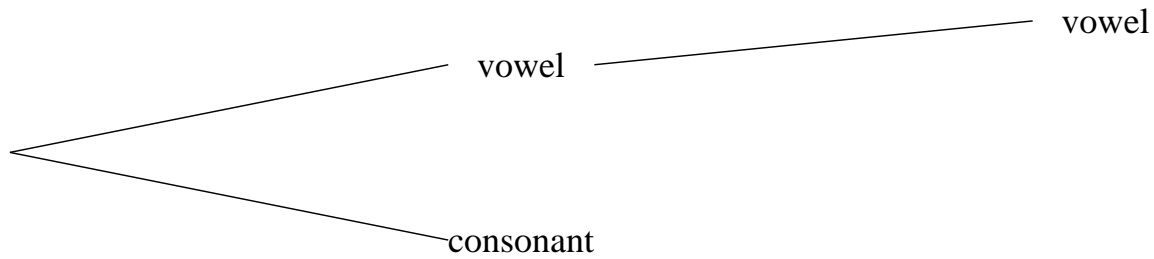


- a) What is the probability of getting two orange socks?

- b) What is the probability of getting green at least once?

- c) What is the probability of getting two socks of different colours?

3: A bag contains 14 counters with the letters of the word TRANSFORMATION written on them. A counter is chosen at random and **not replaced** before choosing another one. Complete this tree diagram and hence answer the following:

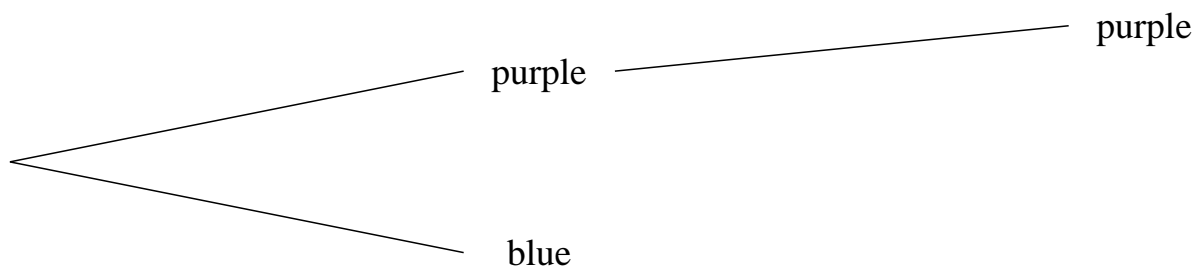


- a) What is the probability of getting two vowels?

- b) What is the probability of not getting two vowels?

- c) What is the probability of not getting exactly one vowel?

4: A bag contains 4 purple sweets and 6 blue sweets. A sweet is chosen at random and **not replaced** before choosing another one. Complete this tree diagram and hence answer the following:



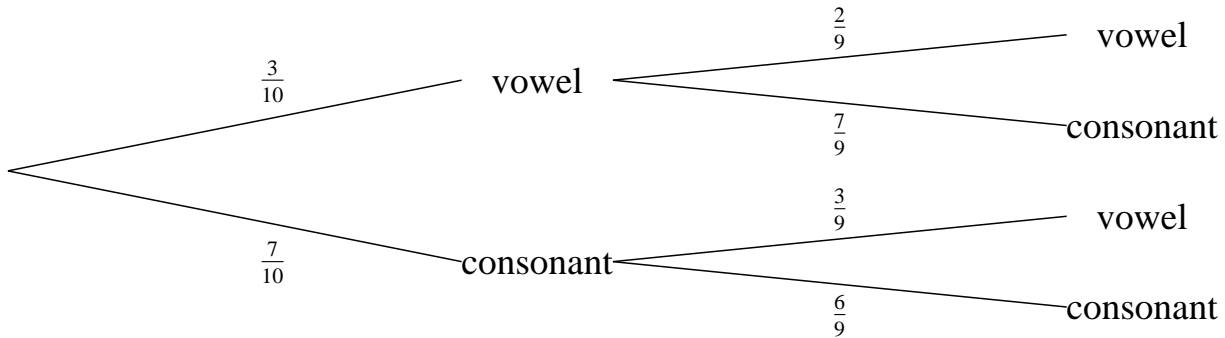
- a) What is the probability of getting two blue sweets?

- b) What is the probability of getting purple at least once?

- c) What is the probability of getting two sweets of the same colour?

Answers: Tree Diagrams (Conditional)

1:

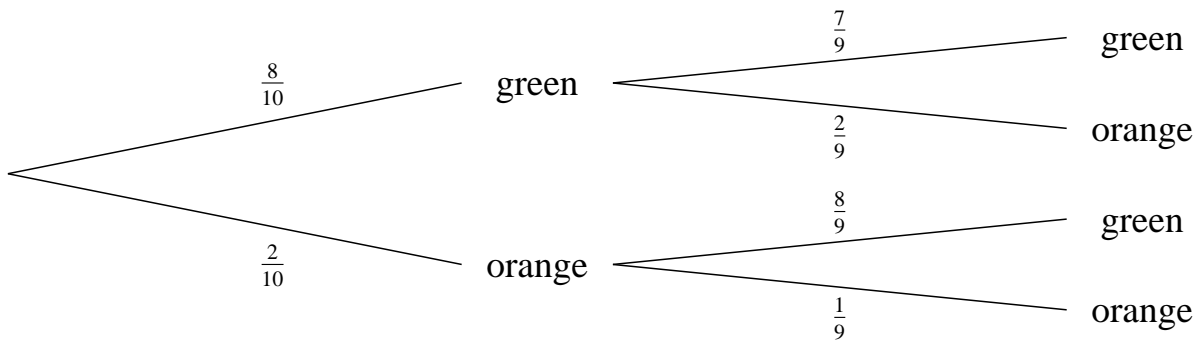


a) $p(\text{getting two consonants}) = \frac{7}{10} \times \frac{6}{9} = \frac{42}{90} = \frac{7}{15}$

b) $p(\text{getting vowel at least once}) = 1 - \frac{7}{10} \times \frac{6}{9} = \frac{48}{90} = \frac{8}{15}$

c) $p(\text{getting exactly one vowel}) = \frac{3}{10} \times \frac{7}{9} + \frac{7}{10} \times \frac{3}{9} = \frac{42}{90} = \frac{7}{15}$

2:

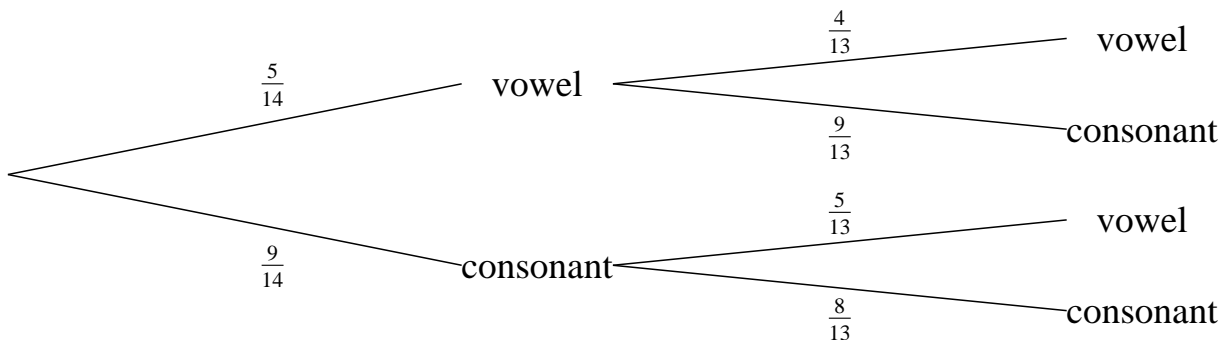


a) $p(\text{getting two orange socks}) = \frac{2}{10} \times \frac{1}{9} = \frac{2}{90} = \frac{1}{45}$

b) $p(\text{getting green at least once}) = 1 - \frac{2}{10} \times \frac{1}{9} = \frac{88}{90} = \frac{44}{45}$

c) $p(\text{getting two socks of different colours}) = \frac{8}{10} \times \frac{2}{9} + \frac{2}{10} \times \frac{8}{9} = \frac{32}{90} = \frac{16}{45}$

3:

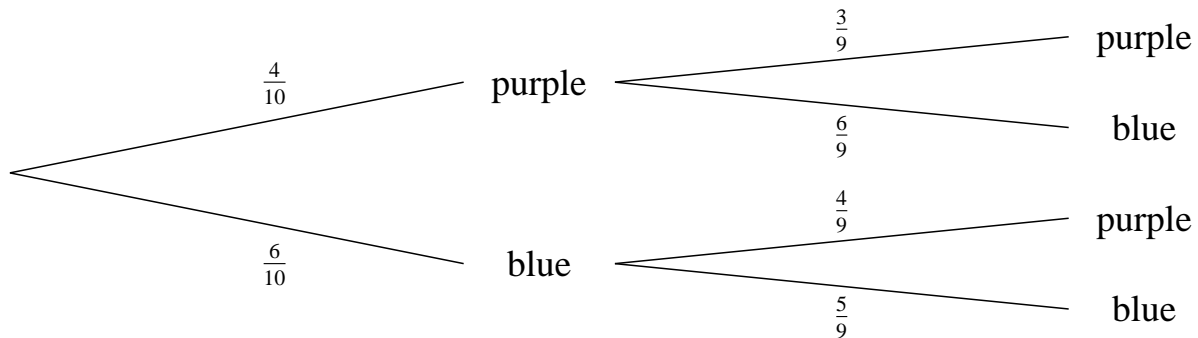


a) $p(\text{getting two vowels}) = \frac{5}{14} \times \frac{4}{13} = \frac{20}{182} = \frac{10}{91}$

$$\text{b) } p(\text{not getting two vowels}) = 1 - \frac{5}{14} \times \frac{4}{13} = \frac{162}{182} = \frac{81}{91}$$

$$\text{c) } p(\text{not getting exactly one vowel}) = \frac{5}{14} \times \frac{4}{13} + \frac{9}{14} \times \frac{8}{13} = \frac{92}{182} = \frac{46}{91}$$

4:



$$\text{a) } p(\text{getting two blue sweets}) = \frac{6}{10} \times \frac{5}{9} = \frac{30}{90} = \frac{1}{3}$$

$$\text{b) } p(\text{getting purple at least once}) = 1 - \frac{6}{10} \times \frac{5}{9} = \frac{60}{90} = \frac{2}{3}$$

$$\text{c) } p(\text{getting two sweets of the same colour}) = \frac{4}{10} \times \frac{3}{9} + \frac{6}{10} \times \frac{5}{9} = \frac{42}{90} = \frac{7}{15}$$