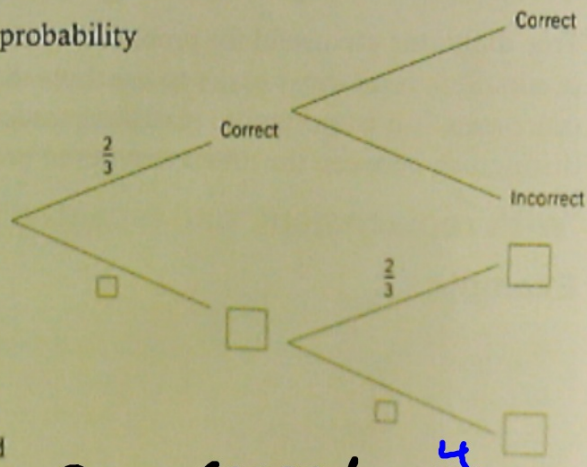


Exercise 3H

1 Lizzie is attempting two exam questions. The probability that she gets any exam question correct is $\frac{2}{3}$.

- Copy and complete the diagram.
- What is the probability that she will get only one of them correct?
- What is the probability she will get at least one correct?

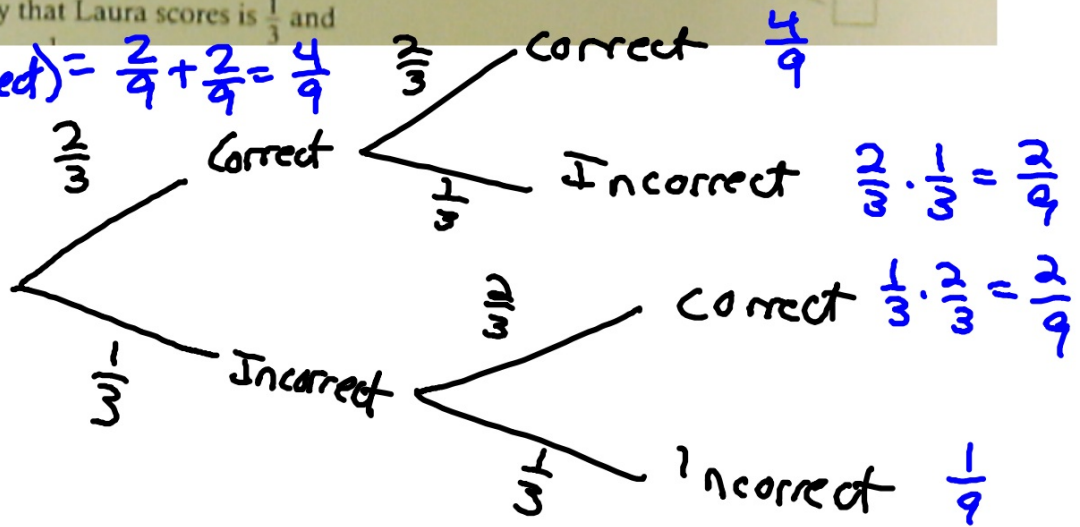


$$1 - P(\text{none correct})$$

$$1 - \frac{1}{9} = \frac{8}{9}$$

2 When Laura and Michelle play in the hockey team the probability that Laura scores is $\frac{1}{3}$ and

$$b) P(1 \text{ correct}) = \frac{2}{9} + \frac{2}{9} = \frac{4}{9}$$



5 A 10-sided dice has the numbers 1-10 written on it. It is rolled twice. Find the probability that:

- a exactly one prime number is rolled,
- b at least one prime number is rolled.

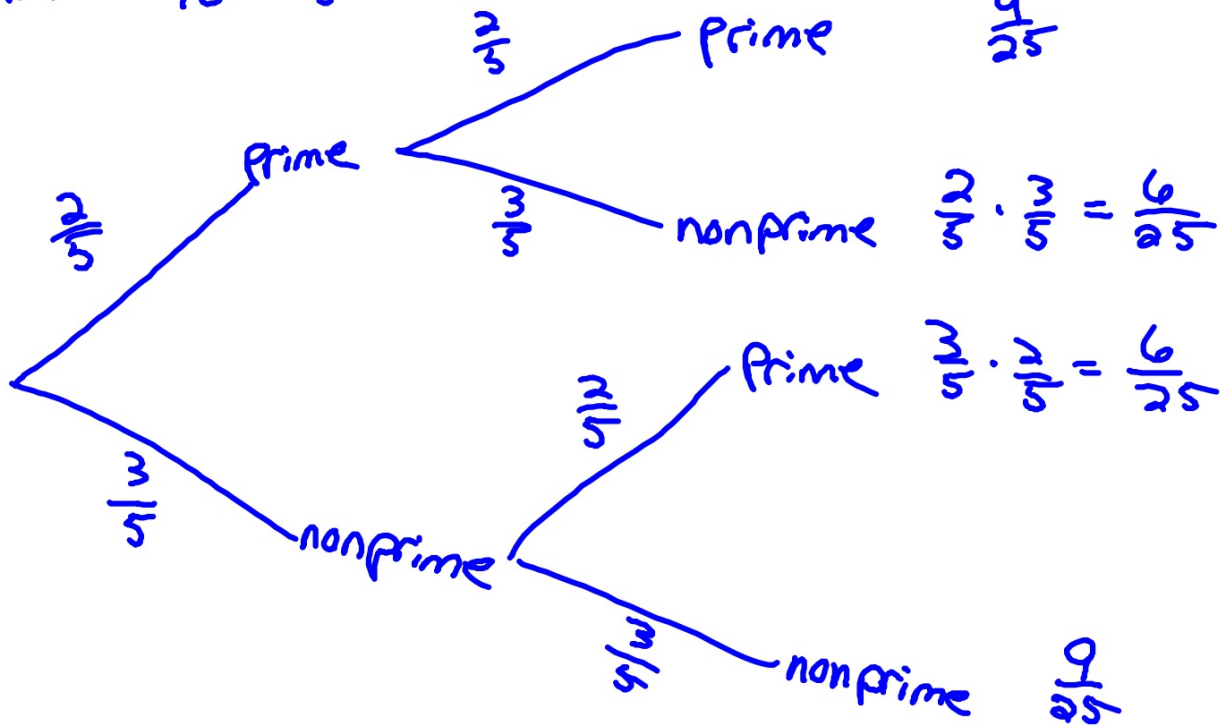
$$P(\text{Prime}) = \frac{4}{10} = \frac{2}{5}$$

$$\frac{2}{5} + \frac{2}{5} = \frac{4}{5}$$

$$\frac{2}{5} - \frac{1}{5} = \frac{1}{5}$$

1, 2, 3, 4, 5, 6, 7, 8, 9, 10

$$\frac{4}{25}$$

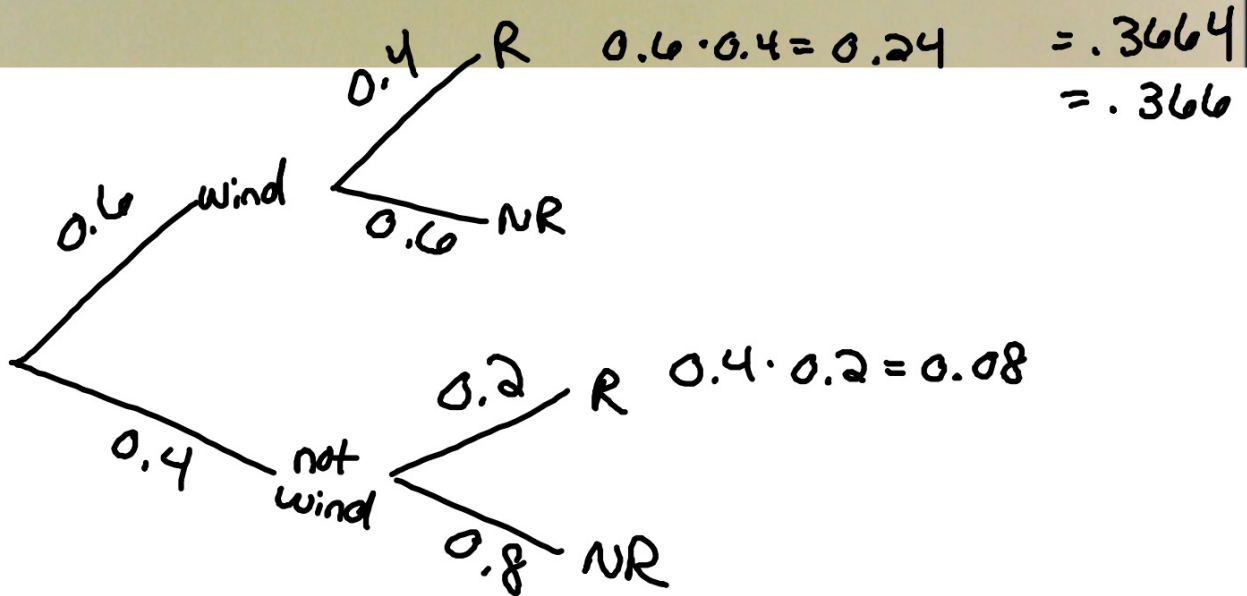


KAM-STYLE QUESTION

The probability of a day being windy is 0.6. If it's windy the probability of rain is 0.4. If it's not windy the probability of rain is 0.2.

- a Copy and complete the tree diagram.
- b What is the probability of a given day being rainy? $.24 + .08 = .32$
- c What is the probability of two successive days **not** being rainy?

$P(\text{not raining}) = 1 - .32 = .68$ $.68 \cdot .68 = .68^2$

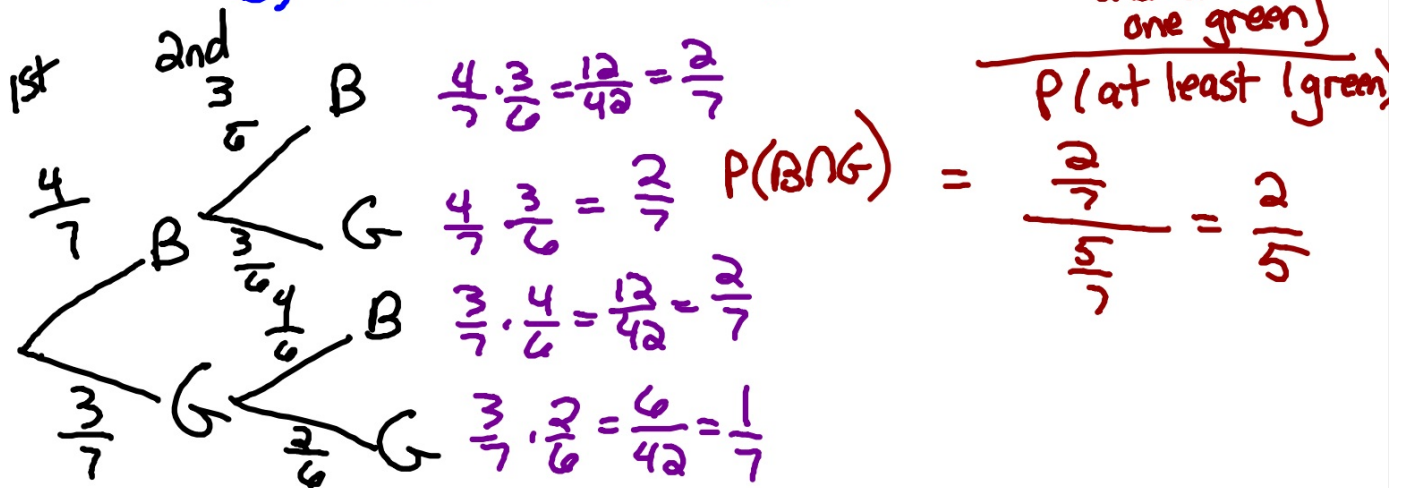


PROBABILITY TREE WITHOUT REPLACEMENT AND CONDITIONAL PROBABILITY

Ex Bag has 4 blue and 3 green marbles
Take out two successively without
replacement.

a) $P(\text{at least 1 green}) = \frac{2}{7} + \frac{2}{7} + \frac{1}{7} = \frac{5}{7}$
 or $1 - P(\text{no green}) = 1 - \frac{2}{7} = \frac{5}{7}$.

b) $P(\text{Blue followed by Green}) = P(\text{blue on 1st and at least one green})$



3I #1 Three cards are drawn at random without replacement

a) P(3 picture cards)

$$\frac{12}{52} \cdot \frac{11}{51} \cdot \frac{10}{50} = \frac{11}{1105}$$

1st 2nd 3rd

3I 2, 4, 5
a3

b) P(2 picture cards)

$$PPP' \quad \frac{12}{52} \cdot \frac{11}{51} \cdot \frac{40}{50} = \frac{44}{1105}$$

$$PP'P \quad \frac{12}{52} \cdot \frac{40}{51} \cdot \frac{11}{50} = \frac{44}{1105}$$

$$P'PP \quad \frac{40}{52} \cdot \frac{12}{51} \cdot \frac{11}{50} = \frac{44}{1105}$$

$$\frac{44}{1105} \times 3 = \frac{132}{1105}$$