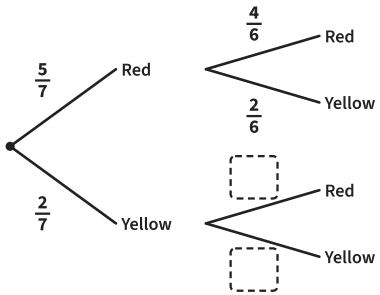
Tree Diagrams: Without Replacement

1

A bag holds 5 red and 2 yellow sweets.
Two sweets are taken without replacement.
Complete the tree diagram.
Find P(both red).

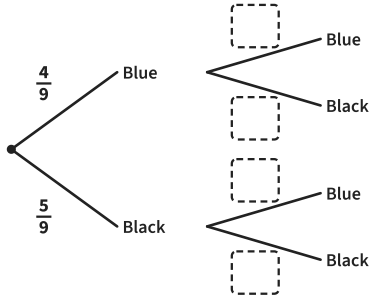


□ × □ = □

multiply along the branches

2

A pencil case holds 4 blue and 5 black pens.
Two pens are taken without replacement.
Complete the tree diagram.
Find P(both black).

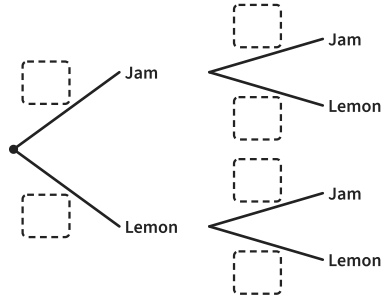


□ × □ = □

multiply along the branches

3

A tray has 6 jam tarts and 3 lemon tarts.
Two tarts are eaten at random.
Complete the tree diagram. Find P(both the same flavour).

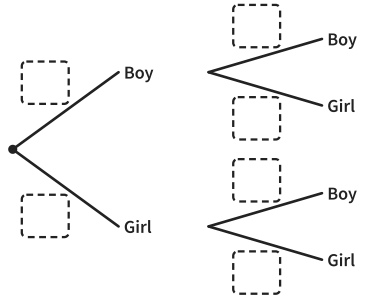


□ × □ + □ × □ = □

add the two paths

4

A team has 4 boys and 6 girls.
Two are picked at random to be captains.
Complete the tree diagram. Find P(at least one boy).

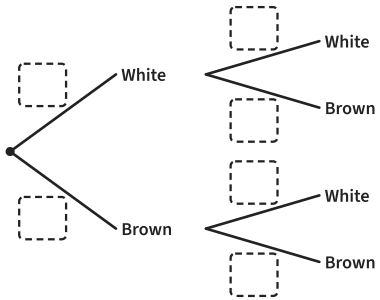


1 − □ × □ = □

1 take away the path with none

5

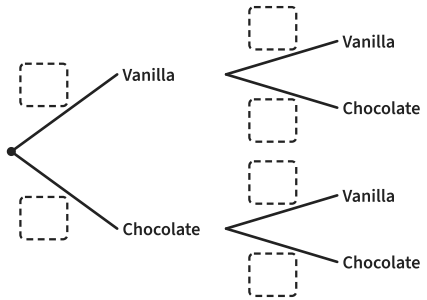
A box has 6 white eggs and 2 brown eggs.
Two eggs are taken at random,
without replacement.
Complete the tree diagram.
Find the probability of one egg of each colour.



Answer _____

6

A plate has 12 cupcakes: 9 vanilla and
3 chocolate. Two are eaten at random.
Complete the tree diagram.
Find the probability that both are chocolate.



Answer _____

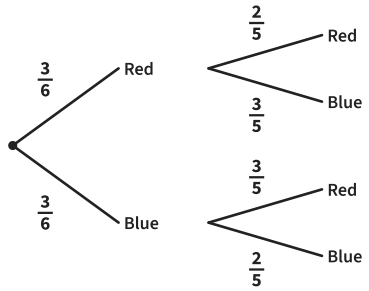
7

A box holds 10 pens, and 4 of them do not work. Two pens are taken at random, without replacement. Draw a tree diagram.
Find the probability that both pens work.

Answer _____

8

A bag has 3 red and 3 blue beads.
Two are taken without replacement.
Leah says P(both red) = $\frac{3}{6} \times \frac{3}{6} = \frac{1}{4}$.
Explain Leah's mistake. Then find P(both red).

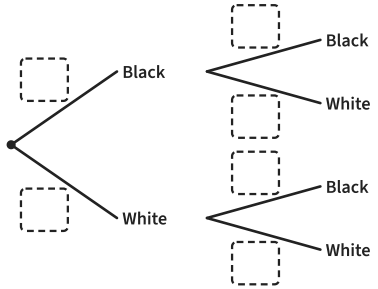


Answer _____

Tree Diagrams: Without Replacement *further practice*

9

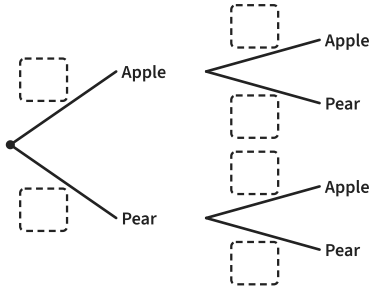
A box has 5 black and 6 white chess pieces. Two are taken at random, without replacement. Find P(both the same colour).



Answer _____

10

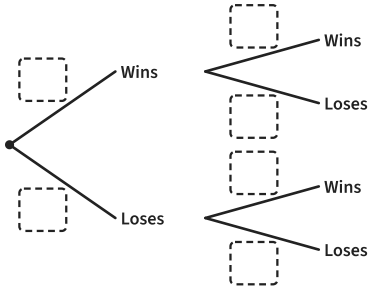
A fruit bowl has 4 apples and 7 pears. Two pieces of fruit are taken at random. Find P(one apple and one pear).



Answer _____

11

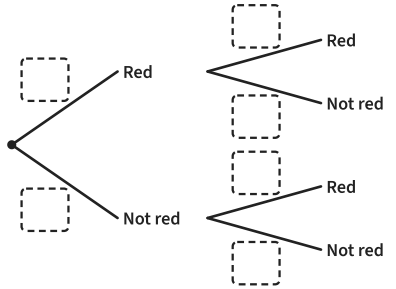
A raffle has 8 tickets left, and 2 of them win a prize. Ella buys two of the tickets. Find P(at least one of her tickets wins).



Answer _____

12

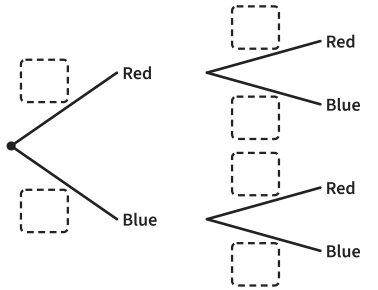
A bag has 6 counters. The probability that one counter picked at random is red is $\frac{1}{3}$. Two counters are taken without replacement. Find P(both red).



Answer _____

13

A bag has 4 red and 5 blue counters. Two are taken without replacement. Find the probability that the second counter is red.



Answer _____

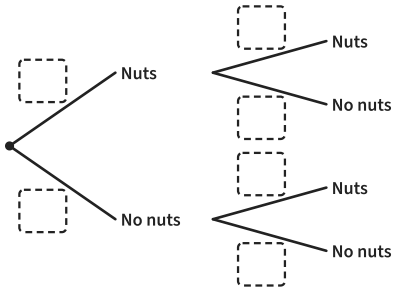
14

A bag has 4 green and 2 yellow marbles. Two are taken. Is P(both green) higher with replacement or without replacement? Show how you know.

Answer _____

15

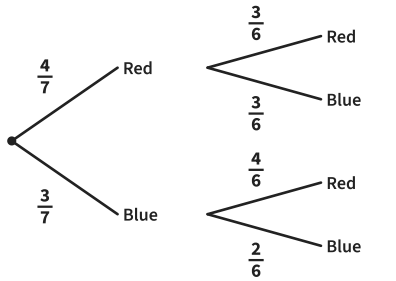
A box has 20 chocolates, and 5 of them contain nuts. Kemi eats two at random. Find the probability that neither contains nuts.



Answer _____

16

A bag has 4 red and 3 blue counters. Two are taken without replacement. Theo says P(one of each) = $\frac{4}{7} \times \frac{3}{6} = \frac{2}{7}$. Is Theo right? Explain.



Answer _____