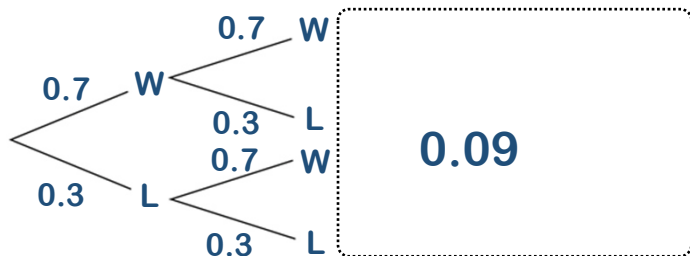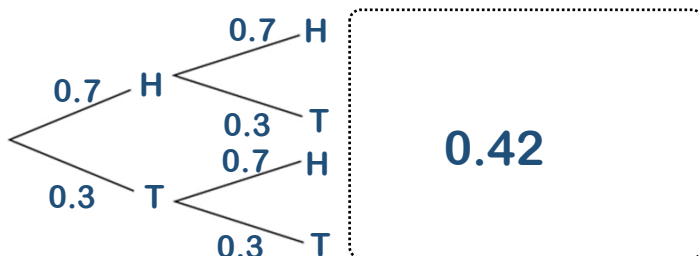maths-school.co.uk

Name:

Independent events

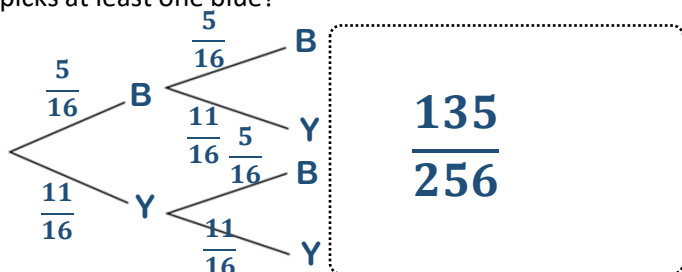**a)** Roger plays 2 games of tennis.
The probability he wins each match is 0.7.
What is the probability he **loses** both matches?

0.7 W — 0.7 W
0.7 W — 0.3 L
0.3 L — 0.7 W
0.3 L — 0.3 L

0.09

b) I flip a biased coin twice. The probability it lands on a head is 0.7. What is the probability it lands on **only one** head?

0.7 H — 0.7 H
0.7 H — 0.3 T
0.3 T — 0.7 H
0.3 T — 0.3 T

0.42

c) A bag contains 5 blue and 11 yellow balls. Liz randomly picks a ball out of the bag, replaces it, and then picks another. What is the probability that she picks at least one blue?

$\frac{5}{16}$ B — $\frac{5}{16}$ B
$\frac{5}{16}$ B — $\frac{11}{16}$ Y
$\frac{11}{16}$ Y — $\frac{5}{16}$ B
$\frac{11}{16}$ Y — $\frac{11}{16}$ Y

$\dfrac{135}{256}$

d) Tom either walks or catches the bus to school. The probability Tom walks to school is 0.8. What is the probability that Tom catches the bus on two consecutive days?
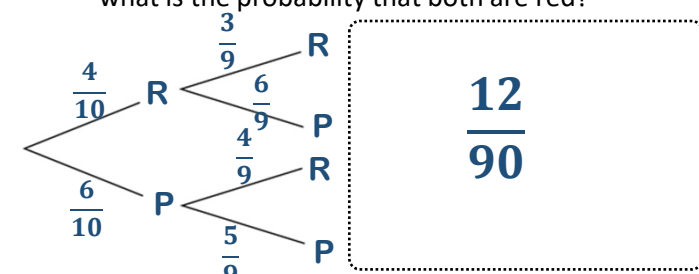
0.8 W — 0.8 W
0.8 W — 0.2 B
0.2 B — 0.8 W
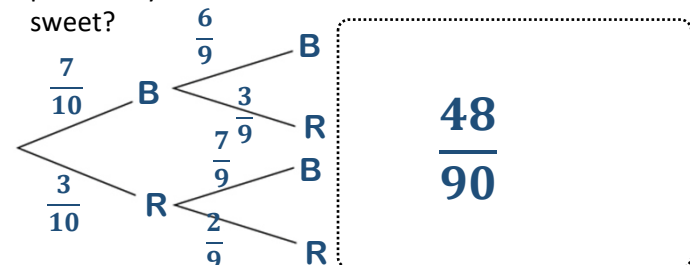0.2 B — 0.2 B

0.04
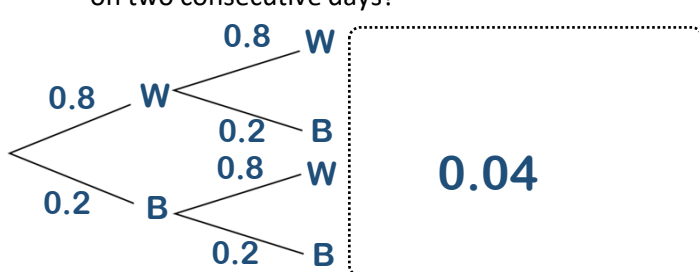
Dependent events

e) Ella has 5 pairs of blue socks and 3 pairs of red socks in her drawer. What is the probability that she chooses red socks followed by blue socks?
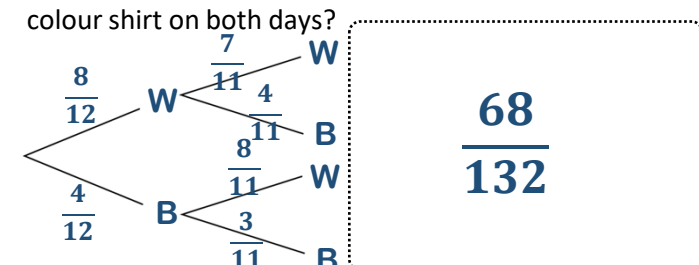
$\frac{5}{8}$ B — $\frac{4}{7}$ B
$\frac{5}{8}$ B — $\frac{3}{7}$ R
$\frac{3}{8}$ R — $\frac{5}{7}$ B
$\frac{3}{8}$ R — $\frac{2}{7}$ R

$\dfrac{15}{56}$
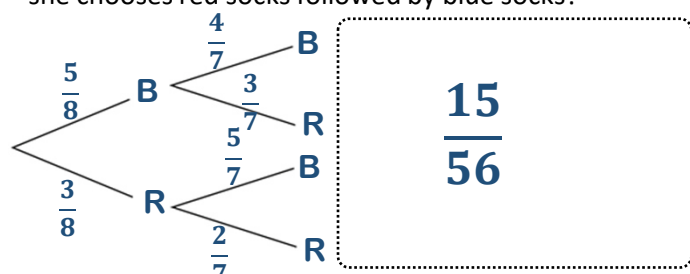
f) A bag has 4 red counters and 6 pink counters. If 2 counters are picked one after another, what is the probability that both are red?

$\frac{4}{10}$ R — $\frac{3}{9}$ R
$\frac{4}{10}$ R — $\frac{6}{9}$ P
$\frac{6}{10}$ P — $\frac{4}{9}$ R
$\frac{6}{10}$ P — $\frac{5}{9}$ P

$\dfrac{12}{90}$

g) Ken has 7 blue sweets and 3 red sweets. Ken eats 2 sweets at random, what is the probability that Ken eats at least 1 red sweet?

$\frac{7}{10}$ B — $\frac{6}{9}$ B
$\frac{7}{10}$ B — $\frac{3}{9}$ R
$\frac{3}{10}$ R — $\frac{7}{9}$ B
$\frac{3}{10}$ R — $\frac{2}{9}$ R

$\dfrac{48}{90}$

h) Jim has 8 white and 4 blue shirts. Jim wears a clean shirt on 2 consecutive days. If he chooses them at random, what is the probability that Jim wears the same colour shirt on both days?

$\frac{8}{12}$ W — $\frac{7}{11}$ W
$\frac{8}{12}$ W — $\frac{4}{11}$ B
$\frac{4}{12}$ B — $\frac{8}{11}$ W
$\frac{4}{12}$ B — $\frac{3}{11}$ B

$\dfrac{68}{132}$

Exam question:

There are 5 blue pens and 4 green pens in a box.
Colin takes a random a pen from the box.
After Colin has taken one, Steven also takes a random pen from the box.
Work out the probability that both men have the same colour pens.

$\frac{5}{9}$ B — $\frac{4}{8}$ B
$\frac{5}{9}$ B — $\frac{4}{8}$ G
$\frac{4}{9}$ G — $\frac{5}{8}$ B
$\frac{4}{9}$ G — $\frac{3}{8}$ G

$\dfrac{32}{72}$