



Programme 10 Worksheet 1: Programme Questions

Answer the following questions while you watch the programme.

1. Sketch the diagram drawn in the sand.

2. How many competitions did Lynne Suzanne enter last year?

3. What is the slogan on the large pack of 'Whatsits' that Lynne looks at in the supermarket?

4. How many tins, missing their labels, are in the cupboard that Ben opens?

5. In 'Tick or Trash', how many pink balls are placed in the bag?

6. How many branches do both the presenters draw on their tree diagrams in solving the 'Tick or Trash' problem?

7. How much money does Ben suggest putting in each winning packet of crisps?

8. In the competition on Ben's chocolate bar, what is the probability of winning the mobile phone?

9. What fraction of Katie's bread is mouldy?

10. What does Katie end up selecting for her snack?



Programme 10 Worksheet 2: Tick or Trash

Here are some questions and answers (by Students A and B) on probability.

Decide which answers to Tick (correct) and which to Trash (incorrect). Give reasons.

Question 1

Martin bought a packet of mixed flower seeds.

The seeds produce flowers that are Red or Blue or White or Yellow.

The probability of a flower seed producing a flower of a particular colour is:

Colour	Red	Blue	White	Yellow
Probability	0.6	0.15		0.15

Martin chooses a flower seed at random from the packet.

- i) Work out the probability that the flower produced will be White.
- ii) Write down the probability that the flower produced will be Orange.

Student A Answer

$$\begin{aligned}
 \text{i) } P(\text{White}) &= 1 - P(\text{not White}) \\
 &= 1 - (0.6 + 0.15 + 0.15) \\
 &= 0.1
 \end{aligned}$$

ii) nought

Student B Answer

$$\begin{aligned}
 \text{i) } P(\text{not White}) &= 0.6 + 0.15 + 0.15 \\
 &= 0.36
 \end{aligned}$$

$$P(\text{White}) = 1 - 0.36 = 0.64$$

$$\begin{aligned}
 \text{ii) } P(\text{Orange}) &= P(\text{Red and Yellow}) \\
 &= 0.6 \times 0.15 \\
 &= 0.09
 \end{aligned}$$



Programme 10 Worksheet 2: Tick or Trash

Question 2

Sharon has 12 computer discs.

Five of the discs are red.

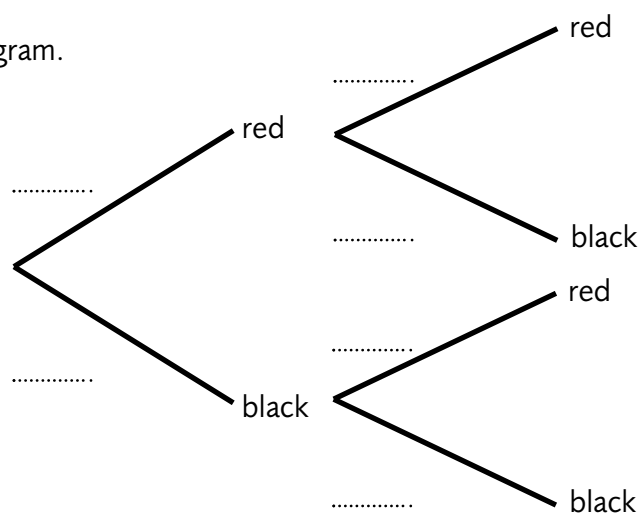
Seven of the disks are black.

She keeps all the disks in a box.

Sharon removes one disc at random. She records its colour and replaces it in the box.

Sharon removes a second disc at random, and again records its colour.

(a) Complete the tree diagram.



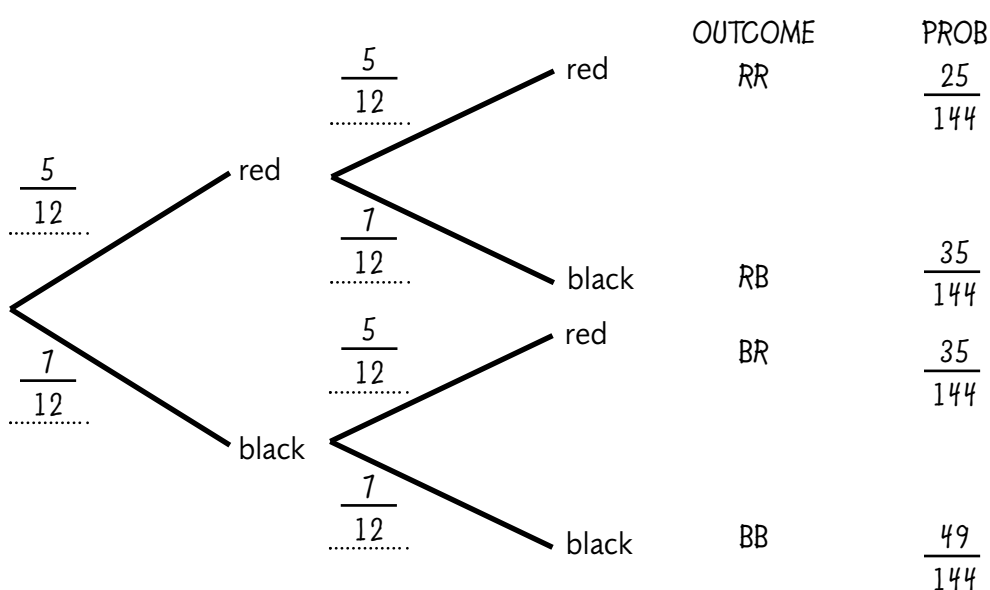
(b) Calculate the probability that the two discs removed will be different colours.



Programme 10 Worksheet 2: Tick or Trash

Student A Answer

(a)

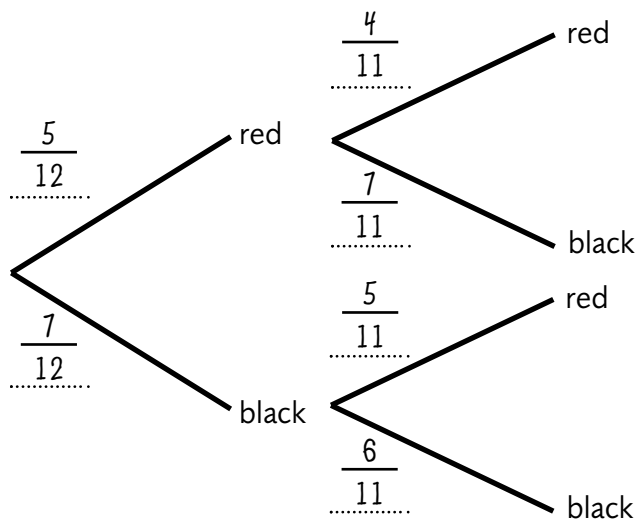


(b) Different colours => either red-black or black-red.

$$\begin{aligned}
 P(\text{Different}) &= P(\text{RB}) + P(\text{BR}) \\
 &= \frac{35}{144} + \frac{35}{144} \\
 &= \frac{70}{144} \\
 &= \frac{35}{72}
 \end{aligned}$$

Student B Answer

(a)



(b) $P(\text{Different}) = P(\text{RB})$

$$\begin{aligned}
 &= \frac{5}{12} \times \frac{7}{11} \\
 &= \frac{35}{132}
 \end{aligned}$$



Programme 10 Worksheet 3: Exam Practice Questions (Edexcel)

Question 1

National Curriculum Reference: D3a

June 1998

Paper 1

Martin bought a packet of mixed flower seeds.

The seeds produce flowers that are Red or Blue or White or Yellow.

The probability of a flower seed producing a flower of a particular colour is:

Colour	Red	Blue	White	Yellow
Probability	0.6	0.15		0.15

- (a) Write down the most common colour of a flower. (1 mark)
- (b) Martin chooses a flower seed at random from the packet.
- i) Work out the probability that the flower produced will be White.
- ii) Write down the probability that the flower produced will be Orange. (3 marks)
- [4]

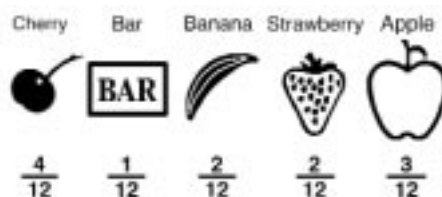
Question 2

National Curriculum Reference: D3a

June 1996

Paper 2

A game in an amusement arcade can show the following pictures.



The fraction under each picture shows the probability of the picture being shown at the first window.



Calculate the probability of the game **not** showing a Bar at the first window.

[2]



Programme 10 Worksheet 3: Exam Practice Questions (Edexcel)

Question 3

National Curriculum Reference: D3a

June 1997

Paper 2

Alison, Brenda, Claire and Donna are the only runners in a race.

The probabilities of Alison, Brenda and Claire winning the race are shown below.

Alison	Brenda	Claire	Donna
0.31	0.28	0.24	

Work out the probability that Donna will win the race.

[2]

Question 4

National Curriculum Reference: D3c

June 1997

Paper 2

A packet contains only yellow counters and green counters.

There are 8 yellow counters and 5 green counters.

A counter is to be taken from the packet at random.

(a) Write down the probability that

- i)** a yellow counter will be taken,
- ii)** a yellow counter will **not** be taken.

A second counter is to be taken from the packet.

(b) Write down all the possible outcomes of taking two counters from the packet.

[4]



Programme 10 Worksheet 3: Exam Practice Questions (Edexcel)

Question 5

National Curriculum Reference: D3d

June 1995

Paper 1

22 coloured balls are used to play a game of snooker.

15 of them are red and the rest have different colours.

One of the balls is chosen at random.

Write down the probability that the ball chosen will be

- i) red,
- ii) not red.

[3]

Question 6

National Curriculum Reference: D3a

June 1995

Paper 1

The probability of a machine being able to manufacture a component within a tolerance of one tenth of a millimetre is 0.995.

- (a)** Work out the probability of the machine **not** being able to manufacture a component to within a tolerance of one tenth of a millimetre.

Ten thousands components are manufactured in one day.

- (b)** Work out an estimate of how many components will be outside the tolerance of one tenth of a millimetre.

[4]



Programme 10 Worksheet 3: Exam Practice Questions (Edexcel)

Question 7

National Curriculum Reference: D3d June 1999 Paper 2

Shreena has a bag of 20 sweets.

10 of the sweets are red.

3 of the sweets are black.

The rest of the sweets are white.

Shreena chooses one sweet at random.

What is the probability that Shreena will choose a

(a) red sweet (1 mark)

(b) white sweet? (1 mark)

[2]

Question 8

National Curriculum Reference: D3f November 1998 Paper 3

Asif's bus could be on time or late or early.

The probability that his bus will be on time is 0.9.

The probability that his bus will be late is 0.03.

Work out the probability that Asif's bus will be early. (2 marks)

[2]



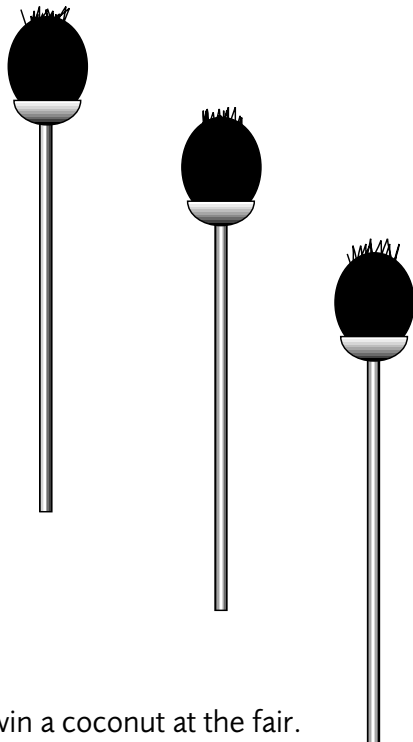
Programme 10 Worksheet 3: Exam Practice Questions (Edexcel)

Question 9

National Curriculum Reference: D3f

June 1998

Paper 3



Helen tries to win a coconut at the fair.
She throws a ball at a coconut.

If she knocks a coconut off its stand, she wins the coconut.
Helen has two throws.

The probability that she will win a coconut with her first throw is 0.2.
The probability that she will win a coconut with her second throw is 0.3.

Work out the probability that, with her two throws, Helen will win

- i)** 2 coconuts,
- ii)** exactly 1 coconut.

(5 marks)
[5]

**Programme 10** Worksheet 3: Exam Practice Questions (Edexcel)**Question 10**

National Curriculum Reference: D3f June 1998 Paper 4

The probability of a person having brown eyes is $\frac{1}{4}$.

The probability of a person having blue eyes is $\frac{1}{3}$.

Two people are chosen at random.

Work out the probability that

- i)** both people will have brown eyes
 - ii)** one person will have blue eyes and the other person will have brown eyes. (5 marks)
- [5]

Question 11

National Curriculum Reference: D3e June 1998 Paper 4

A lorry contains 232 boxes of crisps.

Each box has either plain crisps or cheese and onion flavour crisps.

The probability that a box selected at random holds plain crisps is $\frac{1}{3}$ of the probability that the box holds cheese and onion crisps.

- (a)** Calculate the number of boxes of plain crisps. (3 marks)

Each box holds 48 packets of crisps.

One in every 8 packets of plain crisps has a prize in it. One in every 16 packets of cheese and onion crisps has a prize in it.

A packet is to be selected at random from the lorry.

- (b)** Calculate the probability that the packet will have a prize in it. (3 marks)
- [6]



Programme 10 Worksheet 3: Exam Practice Questions (Edexcel)

Question 12

National Curriculum Reference: D3f June 1998 Paper 4

The probability that a washing machine will break down in the first 5 years of use is 0.27.

The probability that a television will break down in the first 5 years of use is 0.17.

Mr Khan buys a washing machine and a television on the same day.

(a) Calculate the probability that, in the five years after that day, the television will NOT break down. (2 marks)

(b) Calculate the probability that, in the five years after that day, both the washing machine and the television will break down. (2 marks)

[4]

Question 13

National Curriculum Reference: D3e June 1995 Paper 1

The probability of a car chosen at random having defective:

tyres is 0.065

brakes is 0.032

steering is 0.044

Work out the probability that a vehicle chosen at random will have:

- i)** defective tyres, brakes and steering
- ii)** defective tyres but no other defects
- iii)** no defects

[7]



Programme 10 Worksheet 3: Exam Practice Questions (Edexcel)

Question 14

National Curriculum Reference: D3f June 1997 Paper 3

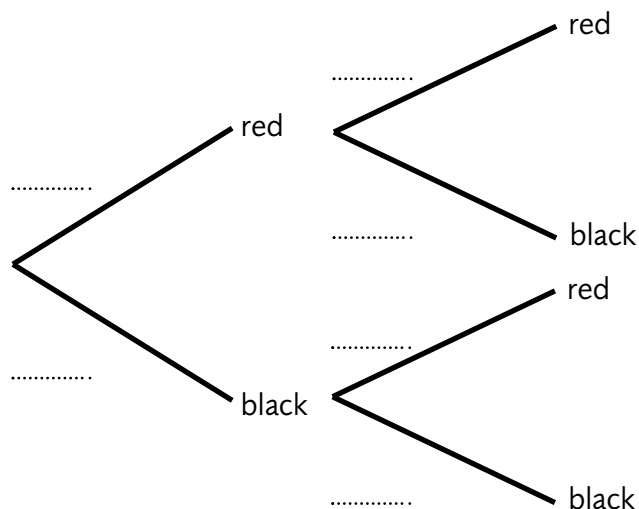
Nikki and Ramana both try to score a goal in netball.
 The probability that Nikki will score a goal on her first try is 0.65.
 The probability that Ramana will score a goal on her first try is 0.8.

- i) Work out the probability that Nikki and Ramana will both score a goal on their first tries.
- ii) Work out the probability that neither Nikki nor Ramana will score a goal on their first tries. [5]

Question 15

National Curriculum Reference: D3f June 1999 Paper 4

Sharon has 12 computer discs.
 Five of the discs are red.
 Seven of the disks are black.
 She keeps all the disks in a box.
 Sharon removes one disc at random.
 She records its colour and replaces it in the box.
 Sharon removes a second disc at random,
 and again records its colour.



- (a) Complete the tree diagram. (2 marks)
 - (b) Calculate the probability that the two discs removed
 - i) will both be red, (2 marks)
 - ii) will be different colours. (3 marks)
- [7]
Total = 62