THIRD SPACE LEARNING

GCSE Exam Questions

Conditional Probability | Probability

GCSE Exam Questions: Conditional Probability

1) The table shows the age and gender of students in a primary school.

	Male	Female	Total
4-6		19	35
7-9	21		38
10-11		14	25
Total	48		

(a) Complete the two way table **(2)**

(b) One student is chosen at random.

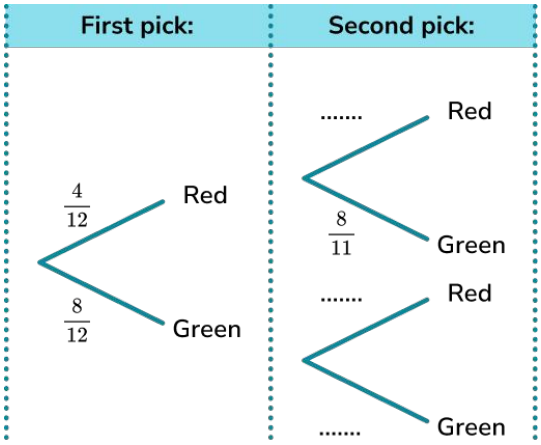
Find the probability that the student is aged 7 - 9 given that they are female.

(2)

(4 marks)

2) **(a)** A bag contains 4 red marbles and 8 green marbles.

Two marbles are picked from the bag. Complete the tree diagram below.



(2)

(b) Find the probability that both marbles are the same colour.

(3)

(5 marks)

GCSE Exam Questions: Conditional Probability

3) **(a)** There are x pieces of fruit in a box. 5 of them are bananas.
The probability of picking 2 bananas is $\frac{2}{9}$.
Prove that $x^2 - x - 90 = 0$.

(4)

(b) Find x, the number of pieces of fruit in the box.

(2)

(6 marks)

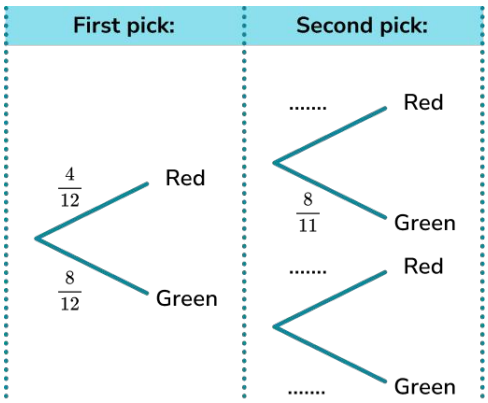
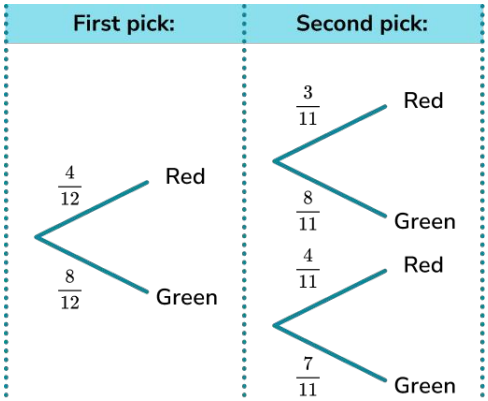
GCSE Exam Questions: Conditional Probability Answers

<table>
<tr><th></th><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>1)

(a)</td><td>The table shows the age and gender of students in a primary school.

<table><tr><th></th><th>Male</th><th>Female</th><th>Total</th></tr><tr><td>4-6</td><td></td><td>19</td><td>35</td></tr><tr><td>7-9</td><td>21</td><td></td><td>38</td></tr><tr><td>10-11</td><td></td><td>14</td><td>25</td></tr><tr><td>Total</td><td>48</td><td></td><td></td></tr></table>
Complete the two way table</td><td>(a)
<table><tr><th></th><th>Male</th><th>Female</th><th>Total</th></tr><tr><td>4-6</td><td>16</td><td>19</td><td>35</td></tr><tr><td>7-9</td><td>21</td><td>17</td><td>38</td></tr><tr><td>10-11</td><td>11</td><td>14</td><td>25</td></tr><tr><td>Total</td><td>48</td><td>50</td><td>98</td></tr></table>
For 2 correct boxes
For all boxes correct</td><td>

(1)
(1)</td></tr>
<tr><td>(b)</td><td>One student is chosen at random.
Find the probability that the student is aged 7-9 given that they are female.</td><td>(b) 17 or 50 seen
$\frac{17}{50}$</td><td>(1)
(1)</td></tr>
<tr><td>2) (a)</td><td>A bag contains 4 red marbles and 8 green marbles. Two marbles are picked from the bag. Complete the tree diagram below.

 
</td><td>(a) $\frac{3}{11}$
For fully correct tree diagram
 
</td><td>(1)
(1)</td></tr>
<tr><td>(b)</td><td>Find the probability that both marbles are the same colour.</td><td>(b) P(red and red) $= \frac{12}{132}$ or
P(green and green) $= \frac{56}{132}$
$\frac{12}{132} + \frac{56}{132}$
$= \frac{68}{132}$</td><td>(1)
(1)
(1)</td></tr>
</table>

GCSE Exam Questions: Conditional Probability Answers

	Question	Answer	Marks
3) (a)	There are x pieces of fruit in a box. 5 of them are bananas. The probability of picking 2 bananas is $\frac{2}{9}$. Prove that $x^2 - x - 90 = 0$.	**(a)** P(banana 1) = $\frac{5}{x}$ P(banana 2) = $\frac{4}{x-1}$ $\frac{5}{x} \times \frac{4}{x-1} = \frac{2}{9}$ **oe** Correct method to show $x^2 - x - 90 = 0$ E.g. $\frac{20}{x^2 - x} = \frac{2}{9}$ $180 = 2x^2 - 2x$ $90 = x^2 - x$ $x^2 - x - 90 = 0$	**(1)** **(1)** **(1)** **(1)**
(b)	Find x, the number of pieces of fruit in the box.	**(b)** $(x - 10)(x + 9) = 0$ $x = 10$ **only**	**(1)** **(1)**

Where to go next?

For more diagnostic questions, and GCSE maths revision resources and worksheets to support students in fixing any misconceptions take a look at the free Third Space Learning GCSE maths revision pages.

Scan the QR code to discover our library of FREE GCSE maths revision resources

Do you have KS4 students who need additional support in maths?

Our specialist tutors will help students to develop the skills they need to succeed at GCSE in weekly one to one online revision lessons. Trusted by secondary schools across the UK.

Visit thirdspacelearning.com to find out more.

THIRD SPACE LEARNING