

Name:

Exam Style Questions

Two-way Tables



Corbettmaths

Equipment needed: Calculator, pen, ruler, pencil

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

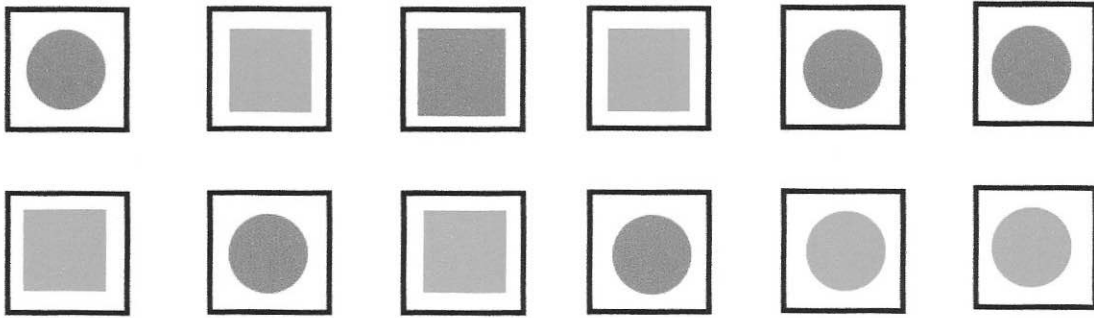
Video 319



Answers and Video Solutions



1. Below are 12 cards from a game.



(a) Complete this two-way table.

	Red	Green
Square	4	1
Circle	2	1 5

(2)

(b) One card is picked at random.
What is the probability it is a green circle?

$$\frac{5}{12}$$

(1)

2.

80 students visited the library over three days.

The two-way table shows some information about these students.



	Monday	Tuesday	Wednesday	Total
Year 7	7	18	13	38
Year 8	14	15	13	42
Total	21	33	26	80

(a) Complete the two-way table.

(3)

One of these students is picked at random to win a prize.

(b) Write down the probability that the student is in Year 7.

$$\frac{38}{80} = \frac{19}{40}$$

$$\frac{19}{40} \text{ or } \frac{38}{80}$$

.....

(1)

(c) Write down the probability that the student visited the library on Tuesday.

$$\frac{33}{80}$$

.....

(1)

3. The two-way table shows information about the students in a class.



		Hair colour		
		Brown	Blonde	Red
Glasses	Yes	3 ✓	6 ✓	3 ✓
	No	5 ✓	4	1

(a) Find the total number of students in the class.

$$3 + 6 + 3 + 5 + 4 + 1$$

$$\begin{array}{r} 22 \\ \hline \end{array} \quad (1)$$

(b) A student is chosen at random from the class.
Find the probability that the student

(i) does not wear glasses

$$\frac{10}{22} = \frac{5}{11}$$

$$\begin{array}{r} \frac{5}{11} \text{ or } \frac{10}{22} \\ \hline \end{array} \quad (1)$$

(ii) has blonde hair

$$\frac{10}{22} = \frac{5}{11}$$

$$\begin{array}{r} \frac{5}{11} \text{ or } \frac{10}{22} \\ \hline \end{array} \quad (1)$$

(iii) wear glasses or has brown hair

$$3 + 6 + 3 + 5 = 17$$

$$\begin{array}{r} 17 \\ \hline \end{array} \quad (1)$$

4. A cinema records some information about the visitors they have one weekend.



Day	Adults	Children	Total
Saturday	97	115	212
Sunday	46	102	148
Total	143	217	360

Fill in all the missing values

(3)

5. Aminah runs a market stall.



The table below shows information about what items she has in stock.

	T-shirts	Jumpers	Coats	Total
Small	2	36	28	66
Medium	9	0	1	10
Large	58	51	15	124
Total	69	87	44	200

Complete the two-way table.

(3)

6. 90 people sit their driving tests over one week.



	Under 20 driving lessons	20 or over driving lessons	total
Pass	9	21	30
Fail	45	15	60
total	54	36	90

(a) Complete the two-way table.

(2)

(b) How many people who had 20 or over driving lessons failed their driving test?

15
.....
(1)

(c) What fraction of people failed their driving test?
Give your fraction in its simplest form.

$\frac{60}{90} = \frac{2}{3}$
.....
 $\frac{2}{3}$
(2)

Alfie says "having 20 or over driving lessons helps a person pass their driving test."

(d) Explain why Alfie is correct.

with under 20 lessons, $\frac{1}{6}$ of people passed.
with 20+ lessons, $\frac{7}{12}$ of people passed.
 $\frac{7}{12} > \frac{1}{6}$

(2)

7. The two-way table gives some information about the football teams 50 students support.



	Rovers	City	United	Total
Year 7	11	12	3	26
Year 9	9	8	7	24
Total	20	20	10	50

Complete the two-way table.

(3)

8. The two-way table shows the grades students in Year 10 received in their exams.



		Physics			
		A	B	C	D
Maths	A	7	6	1	1
	B	3	5	3	0
	C	4	2	6	3
	D	0	0	1	0

- (a) How many students are in Year 10?

$$7 + 6 + 1 + 1 = 15$$

$$3 + 5 + 3 = 11$$

$$4 + 2 + 6 + 3 = 15$$

$$15 + 11 + 15 + 1 =$$

42

(2)

- (b) How many students received a B in maths?

$$3 + 5 + 3$$

11

(2)

- (c) How many students received the same grade in maths and physics?

$$7 + 5 + 6 = 18$$

18

(2)

- (d) How many students received a higher grade in physics than maths?

$$3 + 4 + 2 + 1 = 10$$

10

(2)

9. Ella manages a cafe.



One morning, she sells the following drinks

- 41 large coffees ✓
- 4 regular hot chocolates ✓
- 28 large teas ✓
- A total of 9 hot chocolates ✓
- A total of 61 coffees ✓
- A total of 79 regular drinks ✓

Complete the two-way table below.

	Regular	Large	Total
Coffee	20	41	61
Tea	55	28	77 83
Hot Chocolate	4	5	9
Total	79	74	153

(3)

10. Jodie has some plastic shapes in a tub.
Here is some information about the shape and colour of the shapes.



	Rhombus	Star	Total
Red	5	5	10
Yellow	4	11	15
Total	9	16	25

- (a) Work out the ratio of red shapes to yellow shapes.
Give your answer in its simplest form.

$$10 : 15$$

$$2 : 3$$

$$\frac{2:3}{\dots\dots\dots}$$

(3)

- (b) What fraction of the yellow shapes are stars?
Give your answer in its simplest form.

$$\frac{11}{15}$$

$$\frac{11}{15}$$

(2)

- ✓
11. 150 students in Years 10 and 11 visit a school canteen.



Some students have packed lunches.
Some students have a cooked lunch.


56 out of the 89 students who have packed lunch are in Year 10.
There are 72 Year 11 students.

Work out how many Year 10 students have a cooked lunch.

	Yr 10	Yr 11	Total
Packed lunch	56	33	89
Cooked lunch	22 ✓	39	61
Total	78	72	150

22

.....
(3)

12.  A coach company runs tours to Scotland and Wales during June, July and August.
In total, 719 people went on a coach tour.

394 people went to Scotland.

264 people went on tours in July.

71 people went on a tour to Scotland in June.

121 of the 300 people who went on a tour in August went to Wales.

Work out how many people went on a coach tour to Wales in June.

	Scotland	Wales	total
June	71	84	155
July	144	120	264
August	179	121	300
Total	394	325	719

84

.....
(3)

13. 100 people study one language at a college.



Some people study French.
Some people study Spanish.
The rest of the people study German.

54 of the people in Year 10 and the rest are in Year 11.
20 of the 29 people who study Spanish in Year 11.
31 people study German.
15 Year 11 students study French.

Work out the number of Year 10's who study German.

	Yr 10	Yr 11	Total
French	25	15	40
Spanish	9	20	29
German	20 ✓	11	31
Total	54	46	100

20

.....
(4)

14. On a particular day, 98 people visit a leisure centre.



- Some are going to the gym.
- Some are going to play tennis.
- Some are going to play badminton.
- The rest are going swimming.

- 51 of the people are adults.
- 21 out of the 40 going to the gym are adults.
- 19 adults and 7 children are going swimming.
- 7 out of the 20 people playing badminton are adults.
- Twice as many children play tennis than adults.

How many children play tennis?

	Adults	Children	Total
Gym	21	19	40
Tennis	4	8	12
Badminton	7	13	20
Swimming	19	7	26
Total	51	47	98

8

(2)

15. There are 40 boys and girls at a youth club.



There are 23 girls.

9 girls play rounders.

4 boys do not play rounders.

How many boys play rounders at the youth club?

	Girls	Boys	Total
Play rounders	9	13	22
Do not play	14	4	18
Total	23	17	40

13

.....
(2)

16. A teacher surveys 66 students on how they travelled to school.



20 of the students were in Year 7.

The teacher surveyed 40% more students in Year 9 than in Year 7.

The rest of the students surveyed were in Year 11.

80% of the students in Year 7 walked to school.

6 more students in Year 9 walked to school than did not walk.

Out of students surveyed, more Year 11 students walked to school than Year 9 students.

One of these students is picked at random

Write down the probability that the student chosen did not walk to school.

	yr 7	yr 9	yr 11	Total
walk	16	17	18	51
not walk	4	11	0	15
total	20	28	18	66

$$10\% \text{ of } 20 = 2$$

$$40\% \text{ of } 20 = 8$$

$$20 + 28 = 48$$

$$66 - 48 = 18$$

$$80\% \text{ of } 20 = 16$$

$$\frac{15}{66} \text{ or } \frac{5}{22}$$

(5)