

Edexcel GCSE

Mathematics (Linear) – 1MA0

TWO WAY TABLES

Materials required for examination

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers

Nil



Instructions

Use black ink or ball-point pen.

Fill in the boxes at the top of this page with your name, centre number and candidate number.

Answer all questions.

Answer the questions in the spaces provided – there may be more space than you need.

Calculators may be used.

Information

The marks for each question are shown in brackets – use this as a guide as to how much time to spend on **each** question.

Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.

Advice

Read each question carefully before you start to answer it.

Keep an eye on the time.

Try to answer every question.

Check your answers if you have time at the end.

1. The two-way table shows some information about the number of students in a school.

	Year Group			Total
	9	10	11	
Boys	149	133	125	407
Girls	154	123	147	424
Total	303	256	272	831

Complete the two-way table.

Pick at random

$$1) P(\text{boy}) = \frac{407}{831}$$

$$2) P(\text{Yr 10}) = \frac{256}{831}$$

$$3) \text{ If student is a girl, find prob she is Yr 10} = \frac{123}{424}$$

$$4) \text{ If student is a Yr 9, find prob student is a boy} = \frac{149}{303}$$

(3 marks)

2. A factory makes three sizes of bookcase.
The sizes are small, medium and large.

Each bookcase can be made from pine or oak or yew.

The two-way table shows some information about the number of bookcases the factory makes in one week.

	Small	Medium	Large	Total
Pine	7	12	4	23
Oak	10	16	8	34
Yew	3	8	2	13
Total	20	36	14	70

Complete the two-way table.

Picked at random

$$i) P(\text{Medium Oak}) = \frac{16}{70}$$

$$ii) P(\text{Yew}) = \frac{13}{70}$$

$$iii) P(\text{Small}) = \frac{20}{70}$$

$$iv) \text{ Given pick is a Yew find prob it is medium} = \frac{8}{13}$$

(3 marks)

3. The two-way table gives some information about how 100 children travelled to school one day.

	Walk	Car	Other	Total
Boy	15	25	14	54
Girl	22	8	16	46
Total	37	33	30	100

- (a) Complete the two-way table.

(3)

One of the children is picked at random.

- (b) Write down the probability that this child walked to school that day.

$$\frac{37}{100}$$

(1)

One of the girls is picked at random.

- (c) Work out the probability that this girl did **not** walk to school that day.

$$\frac{24}{46}$$

(2)

(6 marks)

4. The two-way table gives some information about how 100 children travelled to school one day.

	Walk	Car	Other	Total
Boy	15	25	14	54
Girl	22	8	16	46
Total	37	33	30	100

- (a) Complete the two-way table.

(3)

One of the children is picked at random.

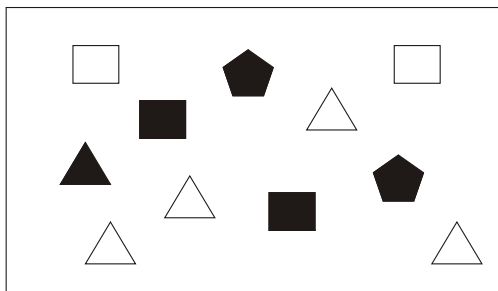
- (b) Write down the probability that this child walked to school that day.

$$\frac{37}{100}$$

(1)

(4 marks)

5.



The diagram shows some 3-sided, 4-sided and 5-sided shapes.

The shapes are black or white.

(a) Complete the two-way table.

(3)

	Black	White	Total
3-sided shape	1	4	5
4-sided shape	2	2	4
5-sided shape	2	0	2
Total	5	6	11

Ed takes a shape at random.

(b) Write down the probability the shape is white **and** 3-sided.

$$\frac{4}{11}$$

(2)

(5 marks)

6. The two-way table shows some information about the number of boys, girls and teachers at three schools.

	School A	School B	School C	Total
Boys	85	29	54	168
Girls	93	31	47	171
Teachers	13	5	9	27
Total	191	65	110	366

Complete the two-way table.

(4 marks)

7. 80 children went on a school trip.
They went to London or to York.

23 boys and 19 girls went to London.
14 boys went to York.

- (a) Use this information to complete the two-way table.

	London	York	Total
Boys	23	14	37
Girls	19	24	43
Total	42	38	80

(3)

One of these 80 children is chosen at random.

- (b) What is the probability that this child went to London?

$$\frac{42}{80}$$

(1)

(4 marks)

8. Felicity asked 100 students how they came to school one day.
Each student walked or came by bicycle or came by car.

49 of the 100 students are girls.

10 of the girls came by car.

16 boys walked.

21 of the 41 students who came by bicycle are boys.

Work out the total number of students who walked to school.

	walk	car	cycle	TOT
Boys	16	14	21	51
Girls	19	10	20	49
Total	35	24	41	100

35

.....
(4 marks)

9. Janice asks 100 students if they like biology or chemistry or physics best.

38 of the students are girls.

21 of these girls like biology best.

18 boys like physics best.

7 out of the 23 students who like chemistry best are girls.

Work out the number of students who like biology best.

	Bio	Chem	Phy	Total
Boys			18	
Girls	21	7	10	38
Total	49	23	28	100

49

.....
(4 marks)

10. 56 students were asked if they watched tennis yesterday.
20 of the students are boys.
17 girls watched tennis yesterday.
32 students did not watch tennis yesterday

One of these students is to be chosen at random.

Write down the probability that the student chosen will be a boy who watched tennis yesterday.
Give your answer as a fraction in its simplest form.

	Watch	Didnt watch	Total
Boys	7	13	20
Girls	17	19	36
Total		32	56

$$\frac{7}{56} = \frac{1}{8}$$

(4 marks)