This is a Class 1 exam

Lebanon Evangelical School for Boys and Girls

Lebanon Evangelical School

for Boys and Girls — Loueizeh - Baabda

Stage Exam 01

06NOV2023

Do NOT write in this box. Your MARK will be placed here.

Subject :	A Level : Maths M0
Class :	11A and 12A
Teacher :	Mr. George El Haber
Duration :	1 hour
Calculators will be ALLOWED Answer on the question paper	

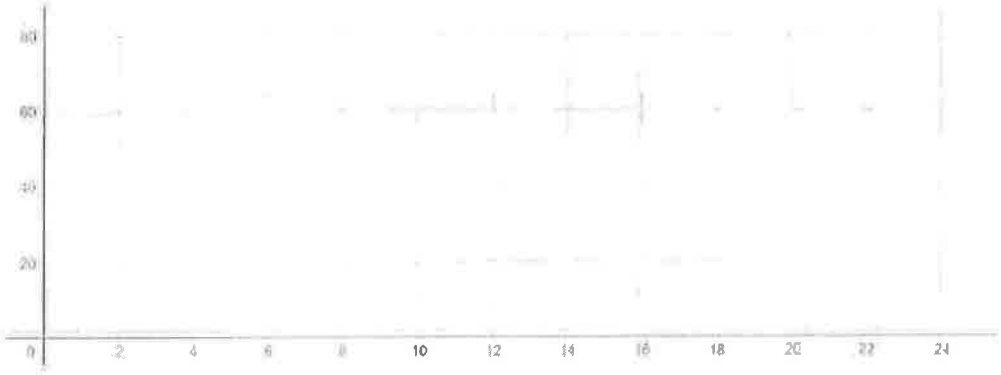
Your name :		*Time taken to complete exam*
Your Class :		
Exam Room :		
How many sheets, including cover sheet :		

- Do not open this paper until the teacher in charge instructs you to do so.
- The most important thing to remember in taking an exam is NEVER PANIC.
- If you are caught cheating in this exam, you will be awarded zero for ALL exams that are taken on this day.

I. The table shows the age, x, and mass, y, of a sample of 11 boys [6 marks]

x(years)	2	4	6	8	10	12	14	16	18	20	22
y (kg)	13	17	22	26	32	41	50	59	68	72	73

a) Draw a scatter graph of this data,



b) Assuming that weight can be modelled using a line of best fit:

1) Draw a line of best fit
2) Estimate the weight of a 15-year-old

_____

_____

3) Estimate the weight of a 24-year-old

_____

_____

4) Which estimate is more accurate, (a) or (b)? and why?

_____

_____

II. The table shows information about the heights, in cm, of a group of Year 9 girls. [5 marks]

least height	150 cm
median	165 cm
greatest height	170 cm

This stem and leaf diagram shows information about the heights, in cm, of a group of 15 Year 9 boys.

15	8 9 9
16	4 5 7 7 8
17	0 3 4 4 7
18	0 2

Key: 15 | 8 represents 158 cm

Compare the distribution of the heights of the girls with the distribution of the heights of the boys.

_____

_____

III. Here are the ages of 9 children at a birthday party: [6 marks]

10 12 13 10 11 14 15 10 12

a) Find the mode

_____

b) Find the median

_____

c) Work out the range

_____

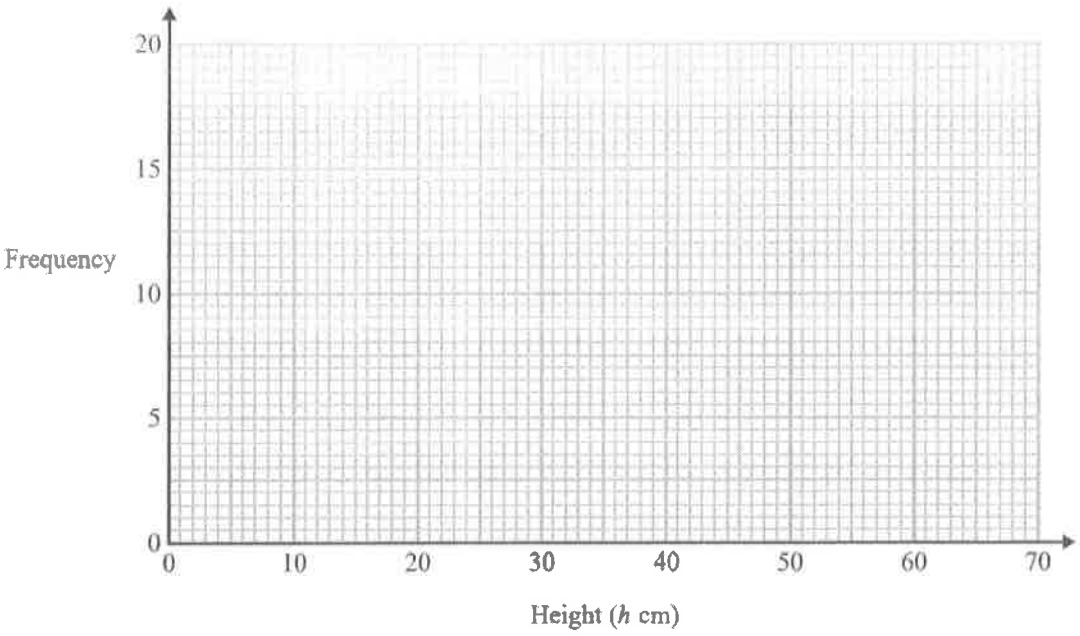
IV. The table shows information about the heights of 80 plants. [6 marks]

Height (h cm)	Frequency
$10 < h \leqslant 20$	7
$20 < h \leqslant 30$	13
$30 < h \leqslant 40$	14
$40 < h \leqslant 50$	12
$50 < h \leqslant 60$	16
$60 < h \leqslant 70$	18

(a) Find the class interval that contains the median.

_____

(b) On the grid, draw a frequency polygon for the information in the table.



(c) Calculate the mean height of the 80 plants

_____

V. There is a total of 45 boys and girls in a choir. [3 marks]
The mean age of the 18 boys is 16.2 years.
The mean age of the 27 girls is 16.7 years.
Calculate the mean age of all 45 boys and girls.

VI. The frequency table gives information about the number of points scored by a player.

[2 marks]

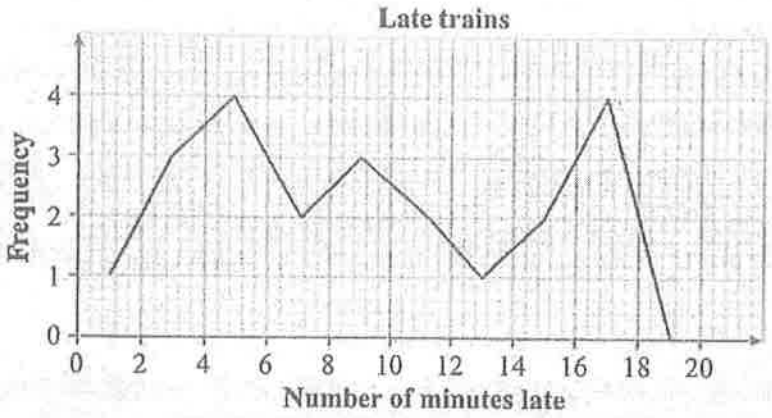
Number of points	Frequency
0	13
1	17
2	8
3	x
4	11

The mean number of points scored is 2

Work out the value of x

VII. A rail company monitors delays on its peak time weekday service. [4 marks]

The results for the last month are shown in the frequency polygon.



a How many trains were more than 14 minutes late last month?

b The company offers compensation to its monthly season ticket holders if the mean delay on its peak weekday trains exceeds 10 minutes. Should the company offer compensation for last month?

VIII. Jess has a 4-digit password for her mobile phone. [8 marks]
Each digit can be between 0 and 9 **inclusive**.

a) How many choices are possible for each digit of the code?

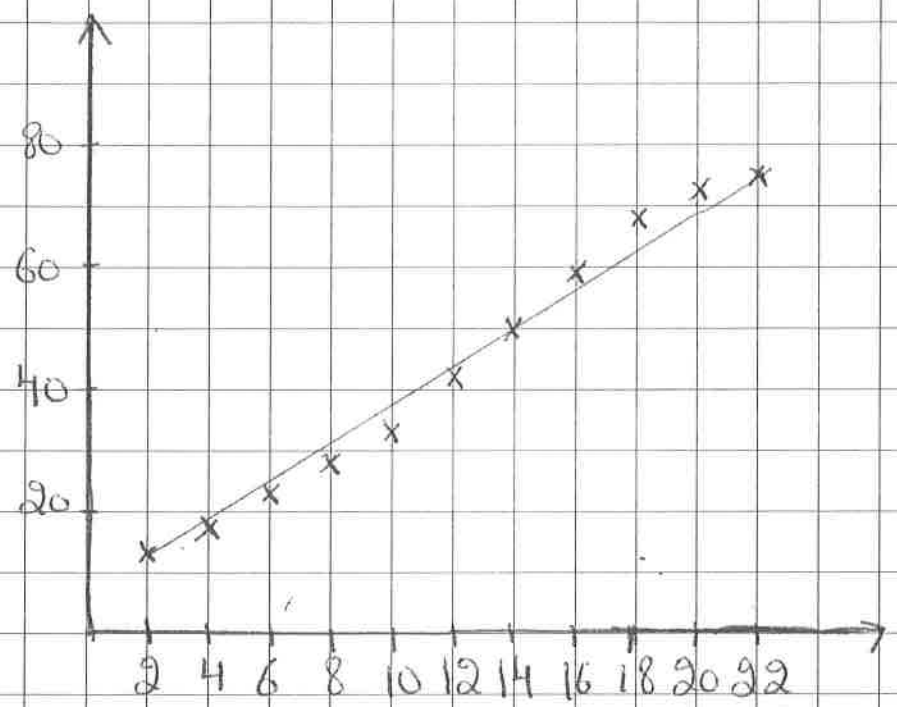
b) What is the total number of 4-digit passwords that Jess can create?
- Jess would like to choose an even number.

- The code can start with a zero.

c) How many different ways are possible now?

SF01/20232024/MO/11A19A Answer Key

I- a)



(2)

b) 1) Graph (1)

b) 2) 54 kg (1)

3) 80 kg (1)

4) (a) because we estimated the weight on the line of best fit while (b) is outside the data (line of best fit) (1)

II- Median = 165 cm (1)
Range = 20 cm (1)
modes = } Girls

Median = 168 (1)
Range = 24 (1) } Boys

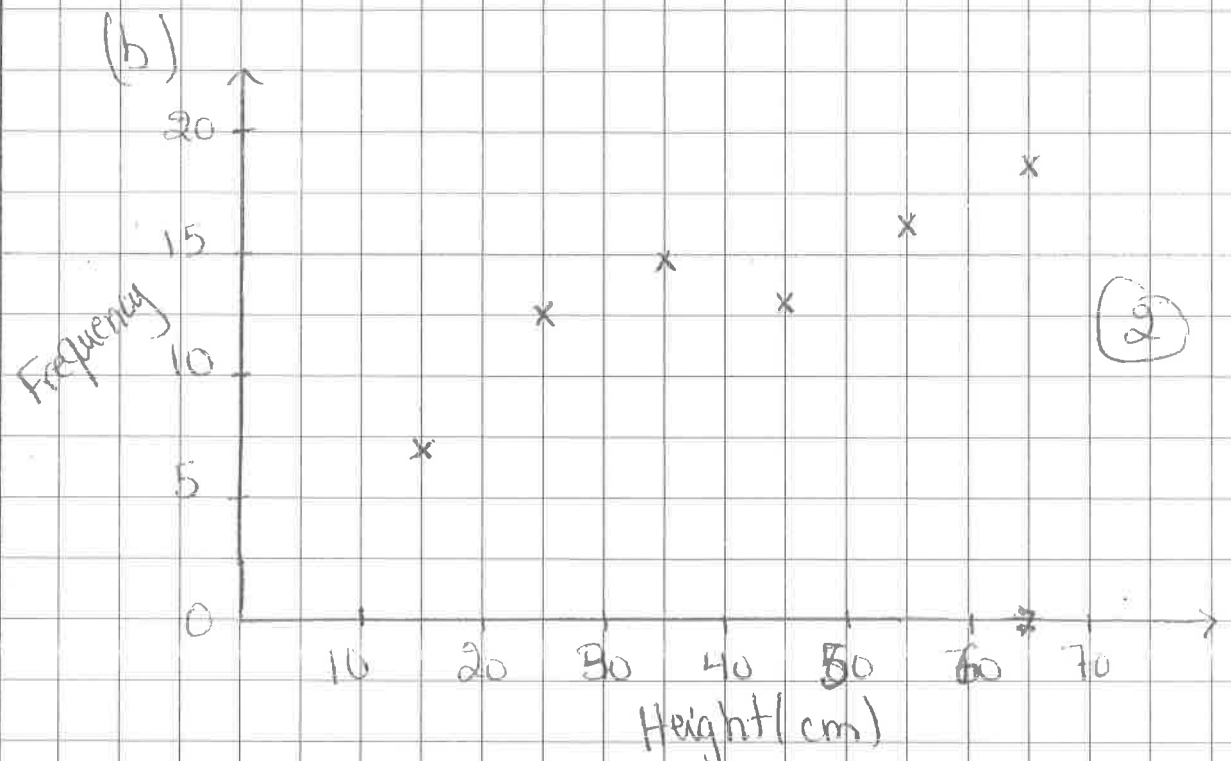
(1) Comparison

(1)

III - a) mode : 10 (2)
b) median : 12 (2)
c) range : 5 (2)

IV - (a) ~~30 40~~ (13.5) (2)

(b)



(2)

→ (c) $\frac{\text{midpoint} \times \text{Fequency}}{\text{Total frequency}} = \frac{(15\times7)+(25\times13)+(35\times14)+(145\times12)+(155\times16)+(65\times18)}{8}$ (2)

V - mean age = 16.5 years (3)

VI - $x = 21$ (2)

→ VII - a) 6 Trains (2)

→ b) Mean $= \frac{(1\times1)+(3\times3)+(5\times4)+(7\times2)+(9\times3)+(11\times2)+(13\times1)+(15\times2)+(17\times4)+(19\times0)}{2}$ (2)

$= 9.37$, so no compensation (2)

page

VIII - a) 10 choices possible (2)

b) - 0, 2, 4, 6 and 8 (5 choices) (2)

- $(5 \times 10 \times 10 \times 10) + (1 \times 10 \times 10 \times 10)$ (2)

c) $(5 \times 10 \times 10 \times 10) + (1 \times 10 \times 10 \times 10)$ (2)