S475/1
Subsidiary
Mathematics
Paper 1
July - August, 2024
2 ⅔ Hours

UGANDA MUSLIM TEACHERS' ASSOCIATION

UMTA JOINT MOCK EXAMINATIONS- 2024

UGANDA ADVANCED CERTIFICATE OF EDUCATION

Subsidiary Mathematics

Paper 1

2 hours 40 minutes

INSTRUCTIONS TO CANDIDATES:

- *Attempt **all** the **eight** questions in section **A** and **four** questions from section **B**.*
- *Any additional question(s) answered will not be marked*
- ***All** necessary working **must** be shown clearly.*
- *Silent, non-programmable scientific calculators and mathematical tables with a list of formulae may be used.*
- *Use $g = 9.8ms^{-2}$ where necessary.*

SECTION A (40 MARKS)

1. Solve for **x** in the equation $\log_x 4 + \log_4 x^2 = 3$ (05 marks)

2. The mean of 10 numbers is 8. If an eleventh number **A** is now included, the mean becomes 9. What is the value of **A**? (05 marks)

3. i) Simplify the following equations. $\sqrt{175} - \sqrt{28} + \sqrt{63}$

   ii) Express in the form $\sqrt[a]{b}$ and hence the values of **a** and **b** $\frac{\sqrt{30}}{\sqrt{5}} + \frac{\sqrt{48}}{\sqrt{8}}$ (05 marks)

4. Given $P(A) = {}^3/_5, P(B) = {}^1/_2$ *and* $P(A \cap B) = {}^1/_3$, find;
   i. $P(A \cap B')$
   ii. $P(A/B')$ (05 marks)

5. A committee of **five** people is chosen at random from a set of **five** women and **seven** men. How many different groups can be chosen if;
   i. At least **one** woman on the committee.
   ii. At most **three** men on the committee. (05 marks)

6. In 2021, the price index of an item was 135 using 2019 as the base year. The value of the item in 2021 was Shs.5400 and in 2020, the same item costed Sh 4725.
   i. Find the value of the item in 2019.
   ii. The price index of the item in 2020 using 2019 as the base year. (05 marks)

7. Evaluate $\int_2^3 \frac{x^4 - x^3 + 1}{x^2} dx$ (05 marks)

8. The masses of 100 students in S.6 class of a certain school are normally distributed with a mean of 125Kg and a standard deviation of 10Kg. Find the number of students whose mass lies between 130 and 150Kg. (05 marks)

SECTION B (60 MARKS)

Attempt **four** questions with at least **one** question from each part.

PART ONE: PURE MATHEMATICS

9. A family is organizing a birthday party for their one-year-old son. They plan to buy crates of soda at Shs. 25,000 each and boxes of mineral water at Shs. 10,000 each. The money to be spent on soda should be at least Shs. 50,000 more than that spent on mineral water. To cater for all the invited guests, they plan to buy at least 5 crates of soda and at least 7 boxes of mineral water. Shs. 250,000 is available to buy both types of drinks, by letting x to be the crates of soda and y the number of boxes of mineral water,
   i. Write down **four** inequalities to represent the above information.
   ii. By shading out the unwanted regions, represent the inequalities on the same graph.
   iii. List the possible number of each drink that the family should buy.
   iv. Determine the possible number of crates of soda and boxes of mineral water that the family should buy so as to spend the least amount of money.

(15 marks)

10. The first, fourth and eighth terms of an Arithmetic progression (**A.P**) form a geometric progression (**G.P**). If the first term is **9**, find;
    i. The common difference of the **A.P.**
    ii. The common ratio of the **G.P.**
    iii. The difference in the sums of the first 5 terms of the progressions. (15 marks)

11. Given the equation of the curve as $y = 3 - 2x - x^2$,

    (a) Determine the:
    i. Intercepts (02 marks)
    ii. Turning points (03 marks)
    iii. Nature of the turning points. (02 marks)

    (b) Sketch the curve. (03 marks)

    (c) Determine the area enclosed by the curve and the $x - axis$. (05 marks)

12. a) (i) Solve the equation $cosec^2\theta - 2cot\theta = 0 \; for \; 0^o \leq \theta \leq 270^o$. (05 marks)

(ii) Prove that $\frac{sin2\theta}{1+cos\theta} = tan\theta$ (05 marks)

b) If matrix **A** = $\begin{pmatrix} 1 & 3 & 0 \\ 0 & 2 & -3 \end{pmatrix}$, $B = (1 \quad -1 \quad 6)$, $find$ matrix **C** such that **CA** = **B**.

(05 marks)

PART TWO: STATISTICS

13. The table below shows the marks of eight students scored in two tests.

Test 1 (%)	65	65	70	60	75	80	90	90
Test 2 (%)	50	80	45	70	30	55	72	60

(a) i) Draw a scatter diagram for the data.

ii) Draw a line of best fit for the data and use it to estimate the marks of a learner in test 2 if he scored 82% in test 1. (08 marks)

(b) Calculate the Spearman rank correlation of the two tests and comment on your result. (07 marks)

14. The marks below were obtained by 40 students in a certain test.

50	71	40	48	61	70	30	62
44	63	60	51	55	25	32	65
54	45	65	50	45	40	25	45
48	45	30	38	30	28	25	48
30	48	28	35	50	48	50	60

(a) Construct a grouped frequency table for the data using equal classes of width starting with 25 – 29 as the first class.

(b) Calculate the;

i. Mean mark

ii. Standard deviation.

(c) Plot an appropriate statistical graph and use it to estimate;

i. Median mark.

ii. Lower quartile. (15 marks)

15. A discrete random variable X has the following probability distribution

X	0	1	2	3	4	5
P(X=x)	0.1	0.15	2a	0.2	a	0.1

Find:

i. The value of **a**

ii. The variance of **X**

iii. The standard deviation of **X**

iv. $P(2 < x \leq 4)$

v. Sketch the graph of the above distribution. (15 marks)

16. The table below shows the average termly marks scored in mathematics tests by a certain learner from his Senior three in 2010 to his Senior six in 2013.

Year	**Termly marks (%)**		
	1st	**2nd**	**3rd**
2010	40	56	60
2011	45	55	70
2012	32	50	80
2013	60	65	

i. Calculate the four point moving average for the data.

ii. Plot the termly marks and the four-point moving average on the same graph and draw a trend line.

iii. Comment on the trend of the student's performance in mathematics.

iv. Predict the student's mark in the final examinations. (15 marks)

END

Jaguoe

S475/1 SUB MATHEMATICS

Nyonzo $\frac{A}{1.2}$

part 1
9

part 2
16

SECTION A

1

1.

$\log_x 4 + \log_4 x^2 = 3$

$\frac{\log_4 4}{\log_4 x} + 2\log_4 x = 3$

M1 - for change of base base.

$\frac{1}{\log_4 x} + 2\log_4 x = 3$

let $\log_4 x = y$

$\frac{1}{y} + 2y = 3$

M1 - for substitution of y

$1 + 2y^2 = 3y$

$2y^2 - 3y + 1 = 0$

$y = \frac{3 \pm \sqrt{9 - 4 \times 2 \times 1}}{2 \times 2}$ → M1 for solving the value of y.

$y = \frac{3 \pm 1}{4}$

A1 - both value of y

Either $y = 4/4 = 1$ or $y = 2/4 = 1/2$

A1 - substitution and value of y

when $y = 1$, $x = 4^1 = 4$ and when $y = 1/2$, $x = 4^{1/2} = 2$

A1 - output of both x-Values

(05)

2.

$y/10 = 8$

$y = 10 \times 80$ m1

$= 80$

mean $=$ $\frac{\text{sum of items}}{\text{number of items}}$

$\frac{80 + A}{11}$ — m1 (numerator)

← M1 $(10+1)$

$9 = \frac{(10 \times 8) + A}{11} = \frac{80 + A}{11}$

↑Attempt to add 10 to 1

Cross multiplication — M1

$99 = 80 + A$

output — A1

$A = 99 - 80 = 19$

So (both)

m, m, - multiplication and sum

(10+1)

Cross multiplication output

m, m, A, - final

$\sqrt{5\times7} - \sqrt{4\times7} + \sqrt{25\times7}$ —— M1 (expressing as a product)

$5\sqrt{7} - 2\sqrt{7} + 5\sqrt{7}$

$6\sqrt{7}$ → A1 - output

ii) $\dfrac{\sqrt{30}}{\sqrt{5}} + \dfrac{\sqrt{48}}{\sqrt{8}} = \dfrac{\sqrt{6}\times\sqrt{5}}{\sqrt{5}} + \dfrac{\sqrt{8}\times\sqrt{6}}{\sqrt{6}}$ → M1 expansion of the numerator

$= \sqrt{6} + \sqrt{6}$ → M1 - simplification

$= 2\sqrt{6}$

$a = 2$ and $b = 6$ → A1 - output for both values

(05)

$P(A) = 3/5$; $P(B) = 1/2$ $P(A\cap B) = 1/3$

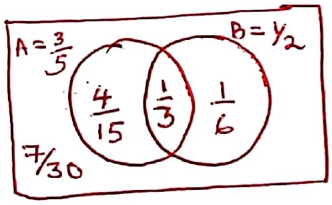
i) $P(A\cap\bar{B}) = P(A) - P(A\cap B)$

$= \left(3/5 - 1/3\right) = 4/15$ ← A1

M1

M1 - substitution

A1 - output



i) $P(A\cap B') = \frac{4}{5}$

ii) $P(A/B') = \dfrac{P(A\cap B')}{P(B')}$

$= \dfrac{4/15}{(7/30 + 4/15)}$

ii) $P(A/\bar{B}) = \dfrac{P(A\cap\bar{B})}{P(\bar{B})}$

$P(\bar{B}) = 1 - 1/2 = 1/2$ —— B1

$P(A/\bar{B}) = \left(4/15 \div 1/2\right)_{M1} = 4/15 \times 2/1 = 8/15$ ← A1

↓ 8/15

B1 - output for $\bar{B}$

M1, A1 - substitution and output

(05)

i) Atleast one woman on the committee

$({}^5C_1 \times {}^7C_4) + ({}^5C_2 \times {}^7C_3) + ({}^5C_3 \times {}^7C_2) + ({}^5C_4 \times {}^7C_1) + ({}^5C_5 \times {}^7C_0)$

M1 - listing all combination

$(5\times35) + (10\times35) + (10\times21) + (5\times7) + (1\times1)$ M1 - simplification

$175 + 350 + 210 + 35 + 1$

771 groups

A1 - output

6.

$$\frac{P_{2021}}{P_{2019}} \times 100 = 135 \qquad P_{2021} = Sh\ 5400$$

$$P_{2020} = Sh\ 4725$$

$$\frac{P_{2021}}{P_{2019}} = 1.35$$

M1 - substitution

$$P_{2019} = \frac{P_{2021}}{1.35} = \frac{5400}{1.35} = 4000$$ M1 B1

M1, B1 - substitution & output

$$\frac{P_{2020}}{P_{2019}} \times 100 = \left(\frac{4725}{4000}\right) \times 100 = 118.125$$ M1 A1

M1, A1 substitution and output

(05)

7.

$$\int_2^3 \frac{x^4 - x^3 + 1}{x^2}\, dx$$

$$\int_2^3 \frac{x^4}{x^2} - \frac{x^3}{x^2} + \frac{1}{x^2}\, dx = \int_2^3 x^2 - x + x^{-2}\, dx$$ M1

M1 - Division by x^2

$$= \frac{x^3}{3}\Big|_2^3 - \frac{x^2}{2}\Big|_2^3 - \frac{1}{x}\Big|_2^3$$

M1 - Integration

$$= \left(9 - \tfrac{8}{3}\right) - \left(\tfrac{9}{2} - 2\right) - \left(\tfrac{1}{3} - \tfrac{1}{2}\right)$$

M1 - Complete substitution of limits

$$= \frac{19}{3} - \frac{5}{2} + \frac{1}{6}$$

M1 (Simplification)

$$= 4$$

A1 - output

(05)

8.

$$P\left(\frac{130 - 125}{10} < Z < \frac{150 - 125}{10}\right)$$ M1 M1

M1 - normalize/standardize - 130

M1 - standardize - 150

$$P(0.5 < Z < 2.5)$$

$$0.49379 - 0.19146$$ (calc) M1 (both)

M1 - Correct probability (both)

$$0.30233 \times 100$$ B1

B1 - multiplication

$$30.233 \simeq 30 \text{ students}$$ A1

A1 - output

SECTION B

9 i) $x \geq 5$ B1

ii) $y \geq 7$ B1

$25000x - 10,000y \geq 50,000$ B1

$25,000x + 10,000y \leq 250,000$ B1

Boundary lines 04

$x = 5$

$y = 7$

$25000x - 10,000y = 50,000$

$5x - 2y = 10$

$(0, -5)$ and $(2, 0)$

$25,000x + 10,000y = 250,000$

$5x + 2y = 50$

$(0, 25), (10, 0)$

iii) $\boxed{(5, 7)}$, $(6, 7)$, $(6, 8)$, $(6, 9)$, $(6, 10)$, $(7, 7)$ B1 – At least one point correct

iv) $(25,000 \times 5) + (10,000 \times 7)$

$125,000 + 70,000$

$195,000$

The family should spend sh 195,000 Correct substitution of a correct point B1 – Amount spent

B1 – Inequality

15

9

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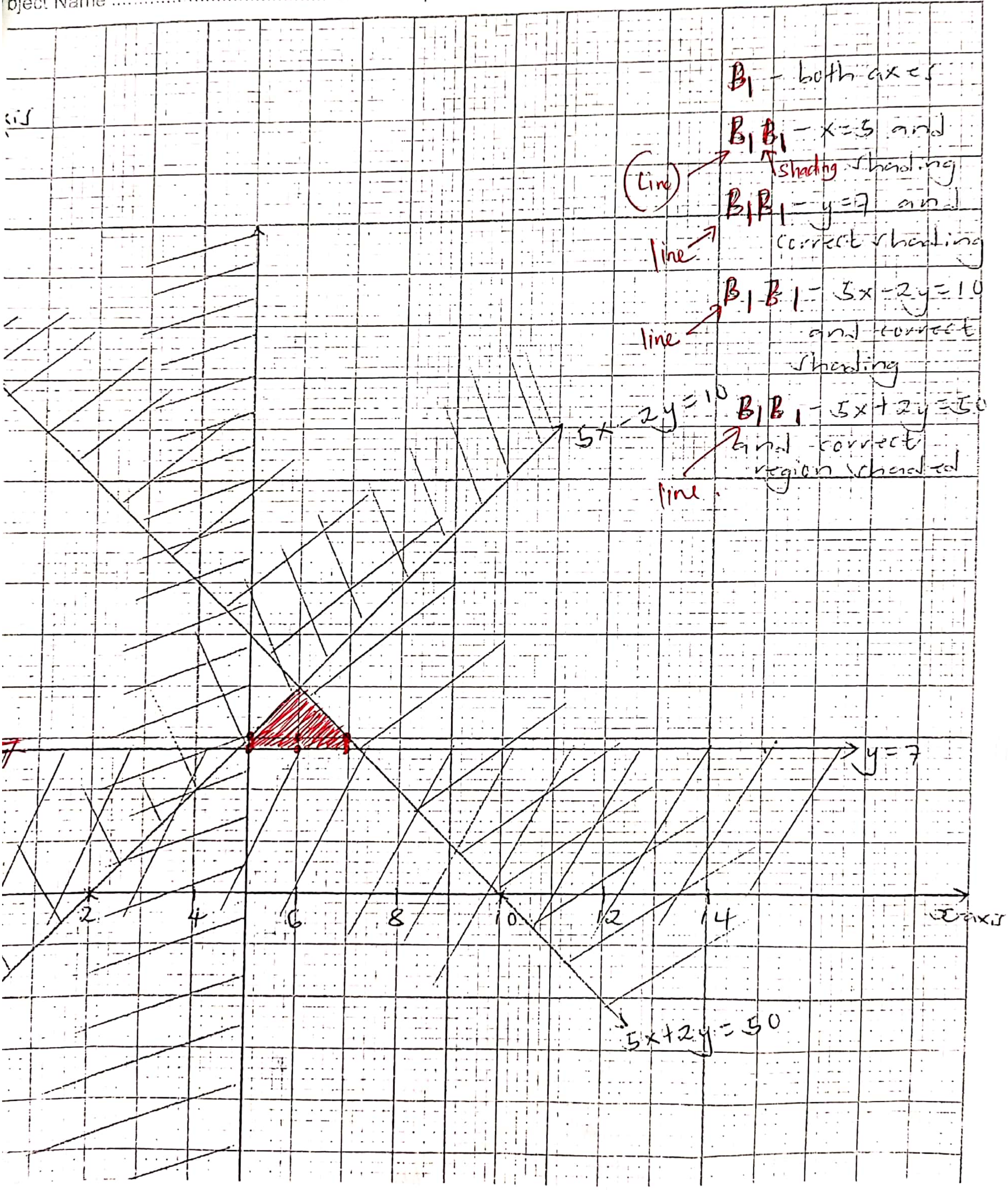


10

(i)

3) $a, \quad a+3d$ and $a+7d$ (GP) (all the 3)

$$\frac{a+3d}{a} = \frac{a+7d}{a+3d}$$ M1 → Attempt to divide

$a(a+7d) = (a+3d)(a+3d)$ M1 − [Cross X]

$a^2 + 7ad = a^2 + 3ad + 3ad + 9d^2$

$7ad = 6ad + 9d^2$

$ad = 9d^2$

but $a = 9$

$9d = 9d^2$

$9d^2 - 9d = 0$

$9d(d-1) = 0$ M1

Either $9d = 0$ or $d - 1 = 0$

$d = 0$ $\quad d = 1$ A1

$\therefore d = 1$

~~06~~

(ii) $r = \frac{a+3d}{a} = \frac{9+3(1)}{9} = \frac{12}{9} = \frac{4}{3}$ M1 B1

02

(iii)

A.P

$S_n = \frac{n}{2}(2a + (n-1)d)$

$= \frac{5}{2}(2\times 9 + (5-1))$ M1

$= \frac{5}{2}(18+4)$ M1

$= \frac{5}{2} \times 22 = 55$ B1

± 31.778 $\frac{2}{A_1}$ $\frac{1}{2}(86.778 - 55)$

G.P

$S_n = a\left(\frac{r^n - 1}{r-1}\right)$

M1 $= 9\left(\frac{\left(\frac{4}{3}\right)^5 - 1}{\frac{4}{3} - 1}\right)$

M1 $= 9\left(\frac{781}{81}\right)$

$\left(\frac{781}{9}\right) =$ B1

B_1 − A.P term

m_1 − common ratio

m_1 − cross multiplication

m_1 − simplification

m_1 − solving

A_1 − value of d,

m_1 − substitution for d

B_1 − value of r

m_1 − sub. in the formula of A.P

m_1 − simplification

B_1 − output

m_1 − sub in

$y = 3 - 2x - x^2$ 11.

when $x = 0$, $y = 3$ – B1 | B1 – y value

when $y = 0$ | B1 – both values of x correct

$x = -3$ or $x = 1$ (calculator) } B1

$(-3, 0)$ and $(1, 0)$

ii) Turning points

$y = 3 - 2x - x^2$

$\frac{dy}{dx} = 0 - 2 - 2x$ – B1 } Correct differentiation, | M1 – $\frac{dy}{dx}$

$0 = -2 - 2x$

$2x = -2$

$x = -1$ B1 | B1 – x value

when $x = -1$, $y = 3 - 2(-1) - (-1)^2$

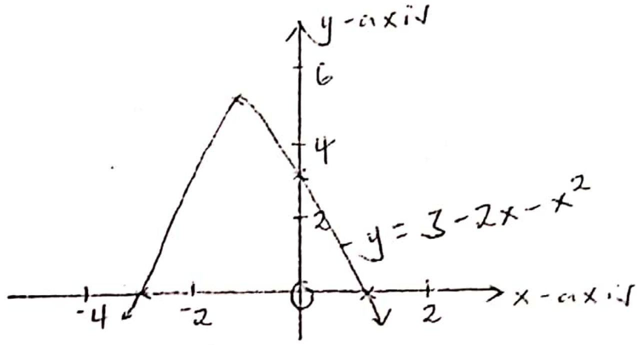
$= 3 + 2 - 1$

$= 5$ B1 | B1 – y value

$\therefore (-1, 5)$

iii) Nature of turning point

$\frac{d^2y}{dx^2} = -2 < 0$ (maxima) B1 M1 | M1 B1 – $\frac{d^2y}{dx^2}$ Conclusion



B1 – both axes

B1, ~~B1~~

B1 → plotting and ~~shape of curve~~

B1 – Turning points correctly

M1 – sub in the integral correct with limits

$\int_{-3}^{1} 3 - 2x - x^2\,dx = \int_{-3}^{1} 3 - 2x - x^2\,dx = 3x - x^2 - \frac{x^3}{3}\Big|_{-3}^{1}$ M1 – Correct Integral

$= 5, -9$ M1 – Substitution M1 – Simplification | M1, M1 – integration

$32/3$ sq units A1 – output

12.

i) $\csc^2\theta - 2\cot\theta = 0$

$1 + \cot^2\theta = \csc^2\theta$

$1 + \cot^2\theta - 2\cot\theta = 0$ } m1

$\cot^2\theta - 2\cot\theta + 1 = 0$

let $\cot\theta = x$ — m1

$x^2 - 2x + 1 = 0$

$x = \dfrac{2 \pm \sqrt{4 - 4\times1\times1}}{2\times1}$

$x = \dfrac{2 \pm 0}{2}$

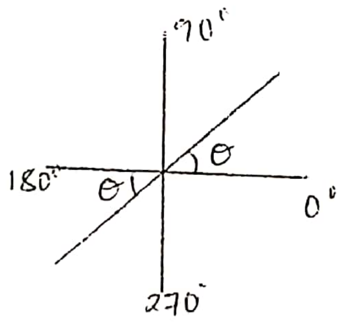
Either $x = 1$ or $x = 1$ → m1

$\cot\theta = 1$

$\dfrac{1}{\tan\theta} = 1$

$\tan\theta = 1$

$\theta = \tan^{-1}(1) = 45^\circ$ → ~~M1~~



$\theta = 180^\circ + 45^\circ = 225^\circ$ m1

$\therefore \theta = \{45^\circ, 225^\circ\}$ → B1

ii) $\dfrac{\sin 2\theta}{1 + \cos 2\theta} = \tan\theta$

From L.H.S

B1 $\sin 2\theta = 2\sin\theta\cos\theta$

B1 $\cos 2\theta = 2\cos^2\theta - 1$

$\dfrac{2\sin\theta\cos\theta}{1 + 2\sin^2\theta - 1}$ M1

$\dfrac{\cancel{2\sin\theta}\cos\theta}{\cancel{2\sin\theta}\sin\theta}$

$\dfrac{\cos\theta}{\sin\theta}$ m1

$\tan\theta$ B1

M1 – substitution of identity

m1 – sub. of x.

m1 – solving for x

m1, B1 – solving and both values of θ

B1 – Identity for $\sin 2\theta$

B1 – Identity

$$\frac{\sin\theta}{\cos\theta} = \tan\theta$$

M1, B1 - simplification and conclusion

$$A = \begin{pmatrix} 1 & 3 & 0 \\ 0 & 2 & -3 \end{pmatrix} \qquad B = \begin{pmatrix} 1 & -1 & 6 \end{pmatrix}$$

$$CA = B$$

C must be a 1×2 matrix.

$C = \begin{pmatrix} a & b \end{pmatrix}$ B1.

B1 - for matrix C

$$\begin{pmatrix} a & b \end{pmatrix}\begin{pmatrix} 1 & 3 & 0 \\ 0 & 2 & -3 \end{pmatrix} = \begin{pmatrix} 1 & -1 & 6 \end{pmatrix} \quad M1$$

M1 - substitution for C in the eqn.

$$\begin{pmatrix} a & 3a+2b & -3b \end{pmatrix} = \begin{pmatrix} 1 & -1 & 6 \end{pmatrix} \quad M1$$

M1 - correct multiplication

$a = 1$

$-3b = 6$

$b = -2$ A1

A1 - for both values of a and b

$\therefore C = \begin{pmatrix} 1 & -2 \end{pmatrix}$ B1

B1 - conclusion.

13.

x	R_x	y	R_y	D	D^2
65	6.5	50	6	0.5	0.25
65	6.5	80	1	5.5	30.25
70	5	45	7	-2	4
60	8	70	3	5	25
75	4	30	8	-4	16
80	3	55	5	-2	4
90	1.5	72	2	-0.5	0.25
90	1.5	60	4	-2.5	6.25
					$\Sigma D^2 = 86$

B1 – Rank X
B1 – Rank y
B1 – Correct squares of difference
B1 – Correct sum of squares.

$$\rho = 1 - \frac{6\Sigma D^2}{n(n^2-1)}$$

$$= 1 - \frac{6 \times 86}{8(64-1)} \quad \text{— M1}$$

$$= 1 - \frac{516}{504}$$

$$= -0.024 \quad \text{— A1}$$

Weak negative correlation – B1

07

$$\bar{x} = \frac{595}{8} = 74.375 \simeq 74$$

$$\bar{y} = \frac{462}{8} = 57.75 \simeq 58$$

$$\therefore (\bar{x}, \bar{y}) = (74, 58) \quad B1$$

mark scored = 55 ± 1

marks

3–29

B_1 – R_x

B_1 – R_y

B_1 B_1 – ΣD^2

M_1 – substitution in the formula

A_1 – output

B_1 – conclusion

14.

arks	Tally	f	x	fx	fx^2	C.F	C.B
5 - 29	卌	5	27	135	3645	5	24.5 - 29.5
30 - 34	卌	5	32	160	5120	10	29.5 - 34.5
35 - 39	//	2	37	74	2738	12	34.5 - 39.5
40 - 44	///	3	42	126	5292	15	39.5 - 44.5
45 - 49	卌 ////	9	47	423	19881	24	44.5 - 49.5
50 - 54	卌 /	6	52	312	16224	30	49.5 - 54.5
55 - 59	/	1	57	57	3249	31	54.5 - 59.5
60 - 64	卌	5	62	310	19220	36	59.5 - 64.5
65 - 69	//	2	67	134	8978	38	64.5 - 69.5
70 - 74	//	2	72	144	10,368	40	69.5 - 74.5
B1		$\Sigma f = 40$ B1	B1	$\Sigma fx = 1875$ B1	$\Sigma fx^2 = 94715$ B1		

B1 - classes
B1 - ~~[illegible]~~
B1 - frequency
B1 - x
B1 - fx
B1 - Σfx
B1 - fx^2
B1 - Σfx^2

) mean mark $= \dfrac{\Sigma fx}{\Sigma f} = \left(\dfrac{1875}{40}\right)_{M1} = 46.875$ marks. A1

M1 - subs
A1 - output

Standard deviation $= \sqrt{\dfrac{\Sigma fx^2}{\Sigma f} - \left(\dfrac{\Sigma fx}{\Sigma f}\right)^2}$

$= \sqrt{\dfrac{94715}{40} - \left(\dfrac{1875}{40}\right)^2}$

$= \sqrt{170.6094}$ ← M1 (variance)

$= 13.0618$ A1

A1 - output

edian mark $= 44.5 + 2.5 = 47$ marks

B1 - output

ower quartile $= 34.5$

B1 - output

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Subject Name .... Paper code ..../........

B1 - vertical axis with starting point and uniform scale

~~B1~~ - horizontal axis with starting point and uniform scale

~~B1 - Plotting (x, y)~~

B3 - all points correct B B B - Plotting all points correctly

M1 - method to determine / estimate mark scored in test 2

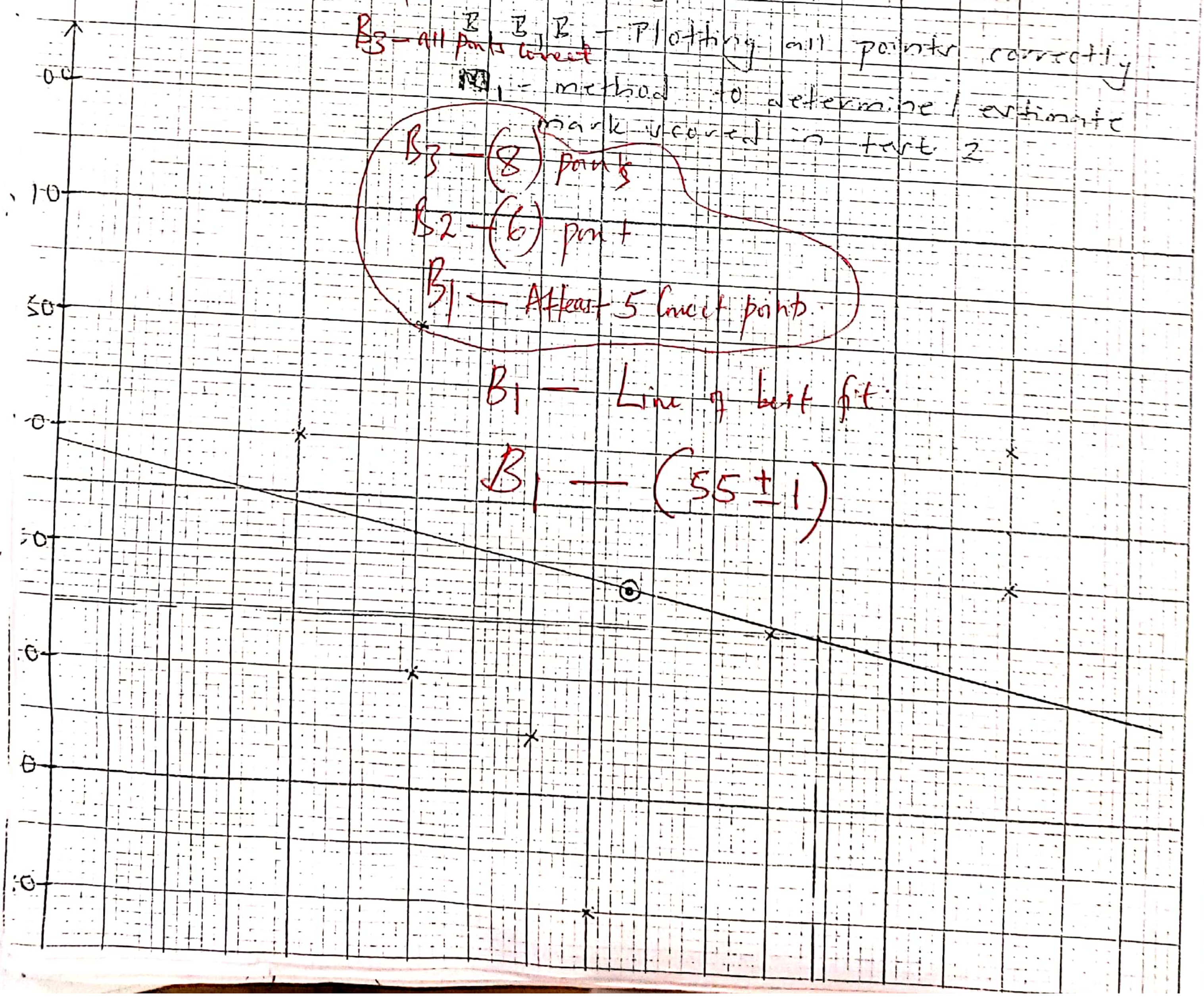
B3 - (8) points

B2 - (6) point

B1 - Atleast 5 Correct points.

B1 - Line of best fit

B1 - (55 ± 1)



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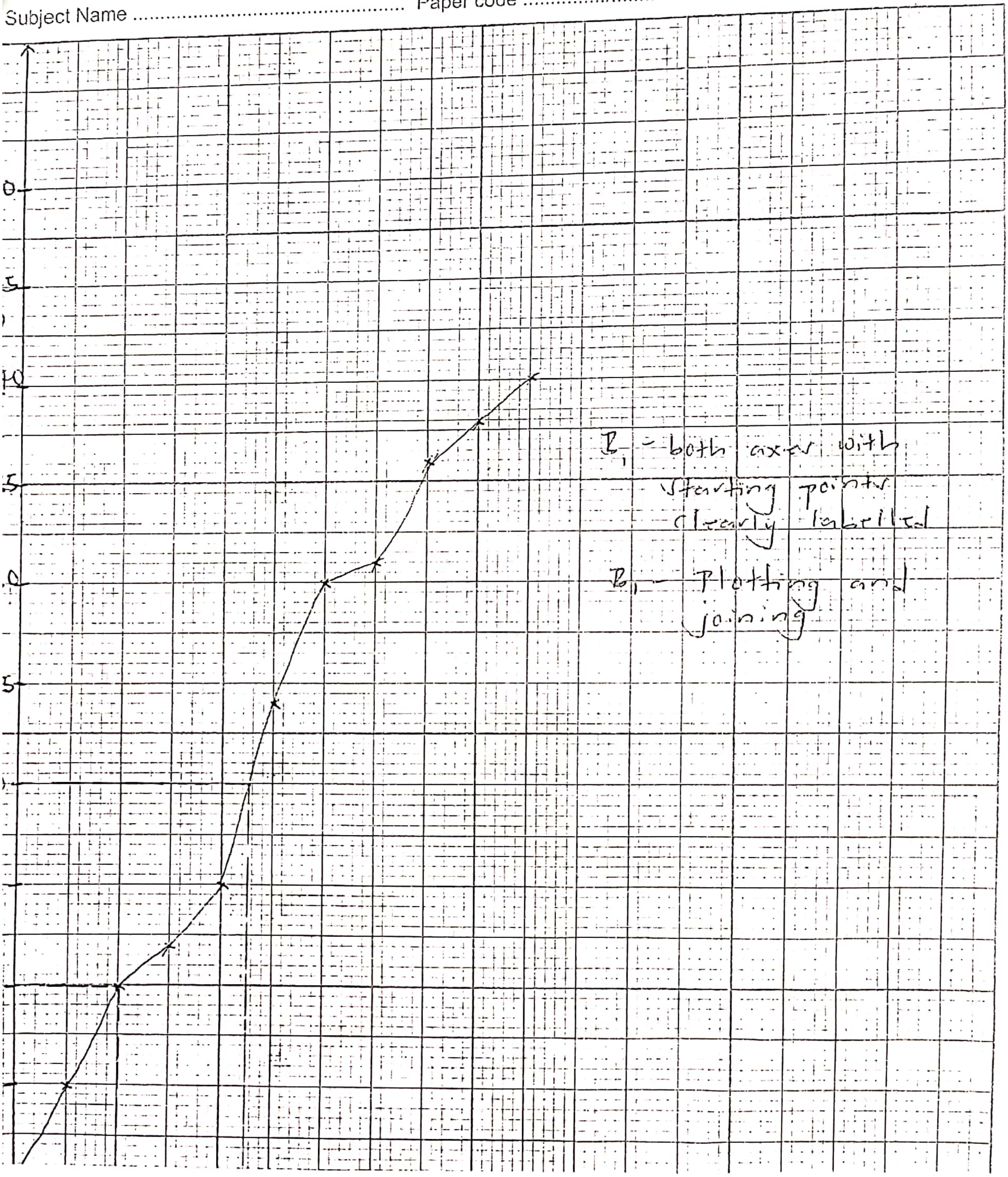


B_1 - both axes with starting points clearly labelled

B_1 - Plotting and joining

15.

$\sum P(X=x) = 1$

$0.1 + 0.15 + 2a + 0.2 + a + 0.1 = 1$ M1

$0.55 + 3a = 1$ B1

$3a = 1 - 0.55$

$3a = 0.45$ —— M1

$a = 0.15$ —— A1

M1, B1 - summing and equating to 1

M1 - simplifying

A1 - output

x	$P(X=x)$	$xP(X=x)$	$x^2P(X=x)$
0	0.1	0	0
1	0.15	0.15	0.15
2	0.30	0.60	1.2
3	0.20	0.60	1.8
4	0.15	0.60	2.4
5	0.10	0.50	2.5
		$\sum xP(X=x)=2.45$ B1	$\sum x^2P(X=x)=8.05$ B1

B1 - $\sum xP(X=x)$

B1 - $\sum x^2P(X=x)$

Variance of $x = \sum x^2P(X=x) - (E(x))^2$

$= 8.05 - (2.45)^2$

$= 2.0475$

M1 - sub. in formula of variance

A1 - output

Standard deviation of $x = \sqrt{2.0475}$ } M1

$= 1.4309$ A1

M1 - sub. in formula

A1 - output

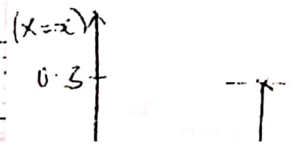
$P(2 < x \leq 4) = P(x=3) + P(x=4)$ —— B1

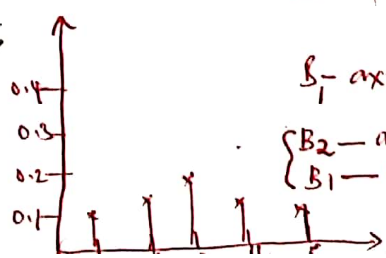
$= 0.20 + 0.15$

$= 0.35$ A1

B1 - listing x-values probabilities

A1 - output





B1 - axes.

B2 — all correct prob.

B1 — 4 correct.

B1 - axes

Year	Term	Marks	M.T	M.A
2010	1st	40		
	2nd	56	201	50.25
	3rd	60	216	54
2011	1st	45	230	57.5
	2nd	55	202	50.5
	3rd	70	207	51.75
2012	1st	32	232	58
	2nd	50	222	55.5
	3rd	80	255	63.75
2013	1st	60	$205+x$	$\frac{205+x}{4}$
	2nd	65		
	3rd	x		

B_4 - moving averages

mark increases.

The student's performance in mathematics $\boxed{\text{increases}}$ over time.

B_1 - comment

$$\frac{205+x}{4} = 65$$

M_1 - substitution

$$x = 260 - 205$$

$$= 55 \pm 1 \text{ marks}$$

A_1 - simplification and output

4 copies

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(To be fastened together with other answers to paper)

UACE

Candidate's Name ....

Signature ....

Subject Name .... Paper code ..../........

Random No.				
Personal Number				

B1 - Vertical axis labelled with starting point

B1 - Horizontal axis and clearly labelled

~~B3 - Plotting all points correctly~~

B1 trend line

M1 - method of estimatio

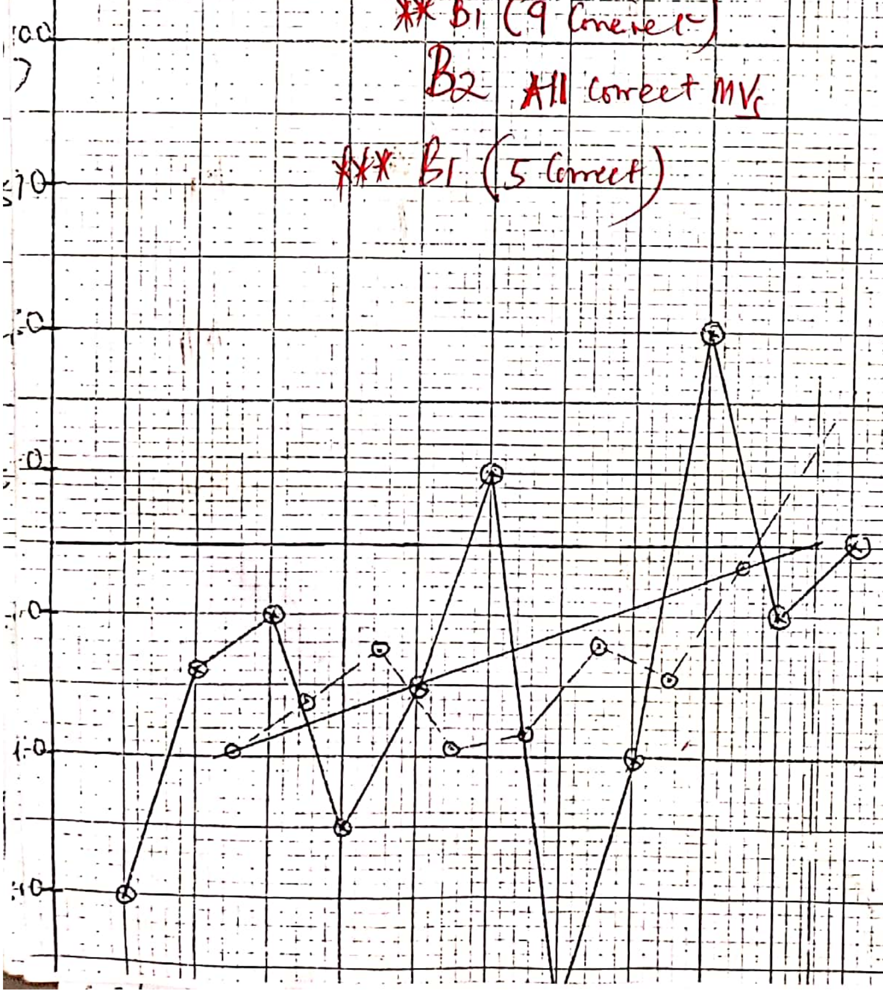
tenly marks

B2 – All Correct

** B1 (9 Correct)

B2 All correct MVs

** B1 (5 Correct)



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ied together with other answers to paper)

UACE

....

Random No.

Personal Number

.... Paper code ..../........

tempy marks

All correct

(Concise r)

All correct MVs

(Correct)

B_1 - Vertical axis labelled with starting point.

B_1 - Horizontal axis and clearly labelled

~~B_2 - Plotting all points correctly~~

B_1 trend line

M_1 - method of estimati