



basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

**SENIOR CERTIFICATE EXAMINATIONS/
NATIONAL SENIOR CERTIFICATE EXAMINATIONS**

ENGINEERING GRAPHICS AND DESIGN P1
MAY/JUNE 2025

MARKS: 100

TIME: 3 hours

This question paper consists of 6 pages.

Barcode label

DO NOT FOLD THE QUESTION PAPER IN HALF.

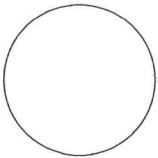
INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions.
2. Answer ALL the questions.
3. ALL drawings are in first-angle orthographic projection, unless otherwise stated.
4. ALL drawings must be prepared using pencil and instruments, unless otherwise stated.
5. ALL answers must be drawn accurately and neatly.
6. ALL the questions must be answered on the QUESTION PAPER, as instructed.
7. ALL the pages, irrespective of whether the question was attempted or not, must be re-stapled in numerical sequence in the TOP LEFT-HAND CORNER ONLY.
8. Time management is essential in order to complete all the questions.
9. Print your examination number in the block provided on every page.
10. Any details or dimensions not given must be assumed in good proportion.

FOR OFFICIAL USE ONLY											
QUESTION	MARKS OBTAINED			$\frac{1}{2}$	SIGN	MODERATED			$\frac{1}{2}$	SIGN	RE-MARKING
1											
2											
3											
4											
TOTAL											
	2	0	0			2	0	0			2 0 0

FINAL CONVERTED MARK	CHECKED BY
100	

COMPLETE THE FOLLOWING:
CENTRE NUMBER
CENTRE NUMBER
EXAMINATION NUMBER
EXAMINATION NUMBER



STAPLE

LAND SURVEYOR'S CERTIFICATE
OF THE BOUNDARY LENGTHS OF
STAND 32 IN MILLIMETRES

AB	22800
BC	36400
CD	23000
DA	39400

SYMBOL LEGEND

DECIDUOUS TREE

EVERGREEN TREE

SHRUB

3

6000

MUNICIPAL SEWER
LINE LAID AT 1 : 40

618

2

CAMP STREET

6000

618,00

2 m PAVEMENT

3000

618,75

EXISTING GATE

REMOVE
EXISTING FINISH
AND REPLACE
WITH ASPHALT

1

EXISTING BUILDING

5000 BL

619

EXISTING 3 m
DRIVEWAY

2000 BL

NEW DRIVEWAY

EXISTING SHED

4000 BL

STAND 32

619,25

STAND 31

NEW 2,3 m SECURITY
FENCE AROUND
STAND 32

619,75

STAND 33

NEW SEWERAGE
LINE LAID AT 1 : 10

3000 BL

PROPOSED NEW
WORKSHOP

4

5

JACARANDA AVENUE

2 m PAVEMENT

1219

EXISTING
SEWERAGE LINE

SITE ZONED FOR
RELIGIOUS BUILDING

SITE PLAN
SCALE 1 : 400

NOTE:
Contractors must verify all dimensions and
levels on site before commencing work.
Architects to be notified immediately of any
discrepancies.

ARCHITECT'S SIGNATURE

CLIENT'S SIGNATURE

ANSWER 20
In the space below, draw, in neat
freehand, the SANS 10143
graphical symbol for:
(a) BATH (elevation and plan)
(b) DISTRIBUTION BOARD

(a) BATH (elevation and plan)

(b) DISTRIBUTION BOARD

2	07/02/2024	REPOSITION ELECTRICAL METER
1	05/02/2024	EXTENSION OF DRIVEWAY

REVISION	DATE	DESCRIPTION
PRINTED BY:	DATE:	
CHERRY PRINTERS	08/02/2024	

CJE ARCHITECTS
99 WILLOW TREE ROAD
ZEERUST
1091

CJE-ARC@gmail.com

PROJECT ARCHITECT:
SIPHO DLAMINI

PROJECT TITLE:
PROPOSED NEW WORKSHOP FOR
ANTEBELLA AND ASSOCIATES,
ON STAND 32, CAMP STREET,
ZEERUST

DRAWING TITLE:
SITE PLAN

PROJECT NUMBER:
82848-24

DRAWING NUMBER:
W S - 4 A - 0 5

REFERENCE CODE:
12186127

SCALE:
1 : 400

DRAWN:
JACK

DATE:
04/02/2024

CHECKED:
DIANNE

DATE:
07/02/2024

QUESTION 1: ANALYTICAL (CIVIL)

Given:
The site plan of an existing building with a proposed new workshop and driveway, a title panel and a table of
questions. The drawing is not presented to the indicated scale.

Instructions:
Complete the table below by neatly answering the questions, which refer to the accompanying drawing, title panel and
civil content.

[30]

QUESTIONS		ANSWERS	
1	What is the name of the architectural firm?	1	
2	What scale is indicated for the site plan?	1	
3	What was the first revision?	1	
4	In which street is the entrance to STAND 32?	1	
5	What is the height of the highest corner of STAND 32 in metres?	1	
6	What new finish must be used on all the driveways?	1	
7	How many evergreen trees are on STAND 32?	1	
8	What new security feature must be added to STAND 32?	1	
9	What is the width of the pavements in millimetres?	1	
10	What does the ratio 1 : 40 on the municipal sewerage line indicate?	1	
11	What does the contour line at 1 indicate?	1	
12	What does the feature at 2 indicate?	1	
13	What line type indicates that a feature must be removed?	1	
14	What is the shortest distance from corner P on the existing building to Camp Street in metres?	1	
15	In what colour must new wood be indicated on elevations?	1	
16	With reference to the sewerage lines, what abbreviations are associated with the features at:	3: 4: 5:	3
17	What will be built across the road north-east of STAND 32?	1	
18	In the space below (ANSWER 18), determine the perimeter of STAND 32 in metres.	3	
19	In the space below (ANSWER 19), determine the combined total area of the existing building and the proposed new workshop in square metres, if the total area of the new workshop is 41,59 m².	4	
20	In the space in the title panel (ANSWER 20), draw, in neat freehand, the SANS 10143 graphical symbol for: (a) BATH (elevation and plan) and (b) DISTRIBUTION BOARD.	4	
TOTAL		30	

ANSWER 18
Show ALL calculations.
(Do NOT round off the answer.)

ANSWER 19
Show ALL calculations.
(Do NOT round off the answer.)

8500

7300

4300

9400

EXISTING
BUILDING

11500

11900

EXAMINATION NUMBER

EXAMINATION NUMBER

2

Copyright reserved

Please turn over



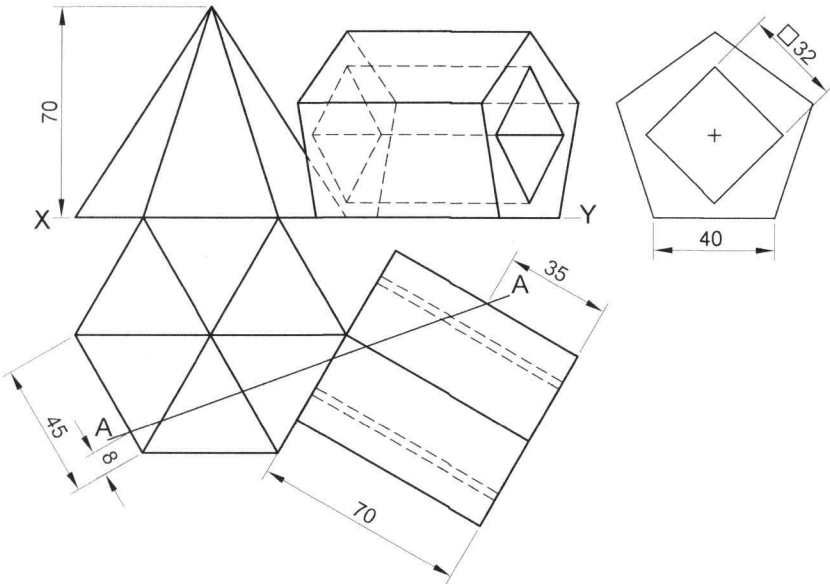
QUESTION 2: SOLID GEOMETRY

- Given:**
- The front view and top view of a right regular hexagonal pyramid and a right regular pentagonal prism that is centrally pierced by a right square prismatic hole
 - An auxiliary view of the pentagonal prism
 - Cutting plane A-A that cuts both solids

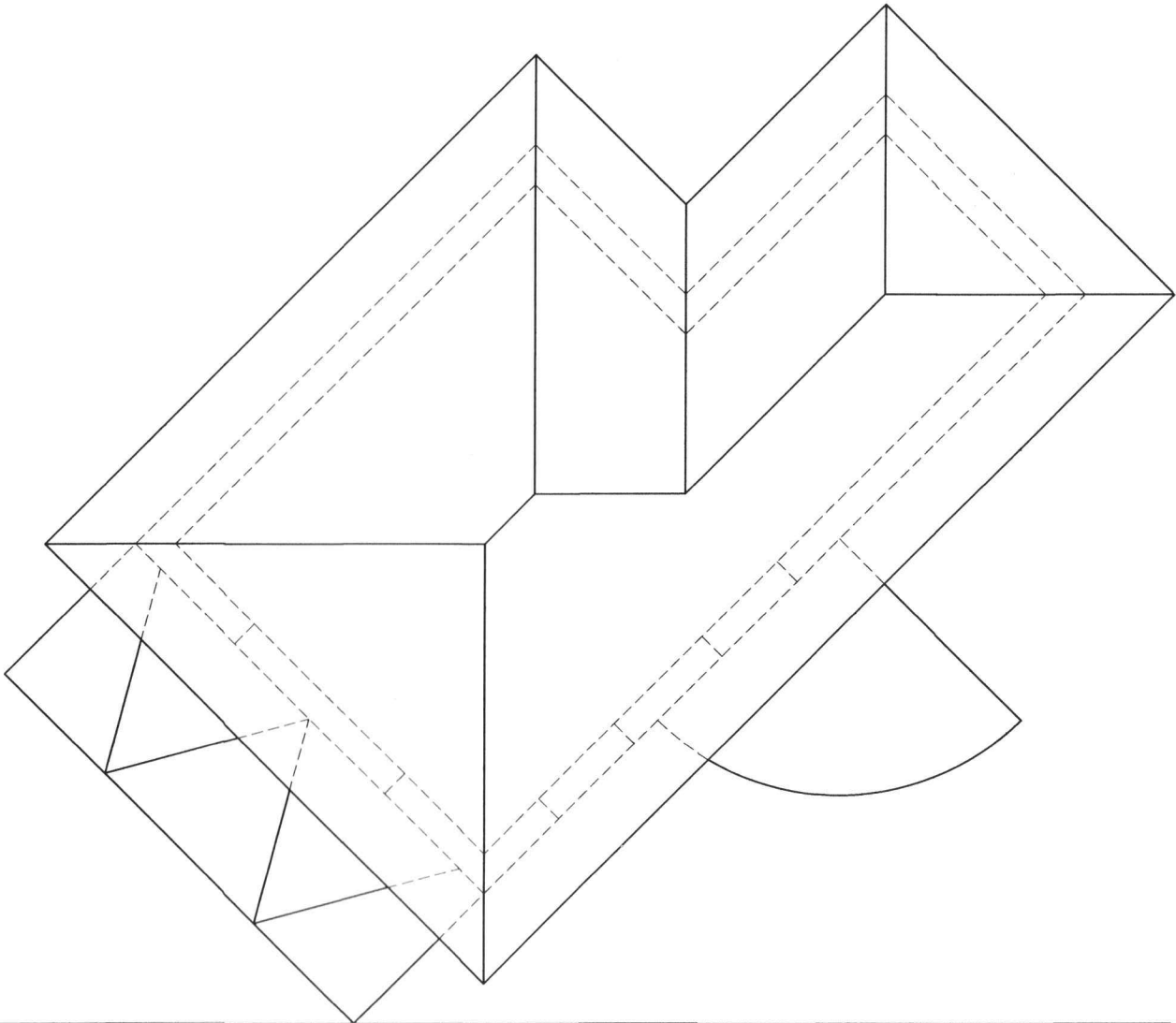
- Instructions:**
- Draw, to scale 1 : 1, the following views of both solids:
- 2.1 The given top view
 - 2.2 A sectional front view
 - 2.3 The true shape of the cut surface of the pentagonal prism

- Planning is essential.
- Show ALL hidden detail.
- Show ALL construction.

[38]



ASSESSMENT CRITERIA				
1	TOP VIEW + CONSTRUCTION	12 ¹ / ₂		
2	SECTIONAL FRONT VIEW	19		
3	TRUE SHAPE	6 ¹ / ₂		
PENALTIES (-)				
TOTAL		38		
EXAMINATION NUMBER				
EXAMINATION NUMBER				
				3



QUESTION 3: PERSPECTIVE

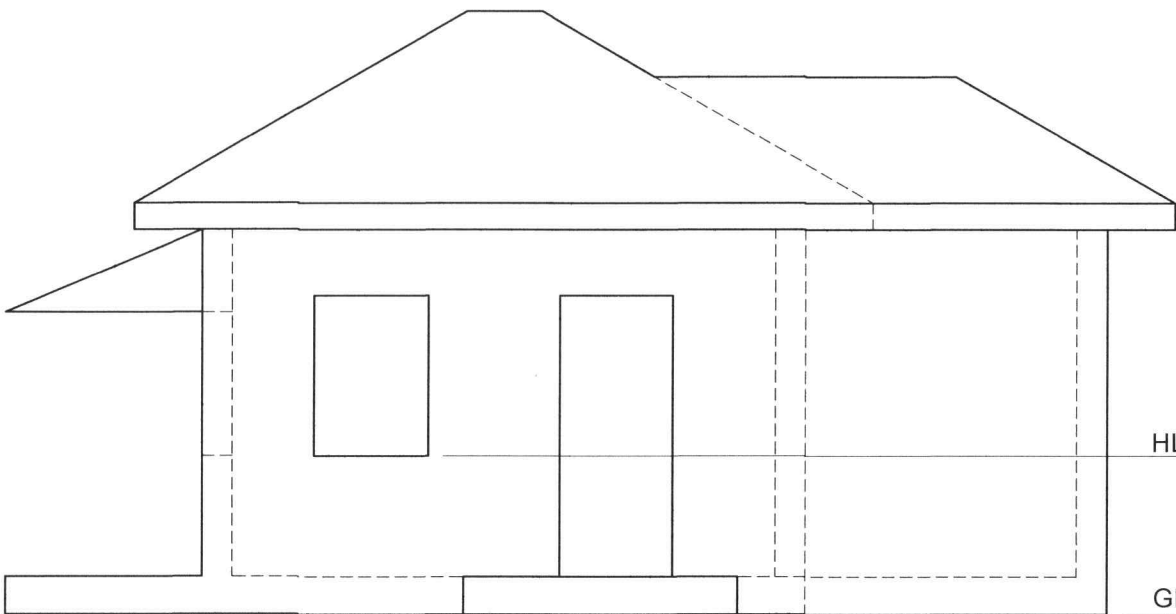
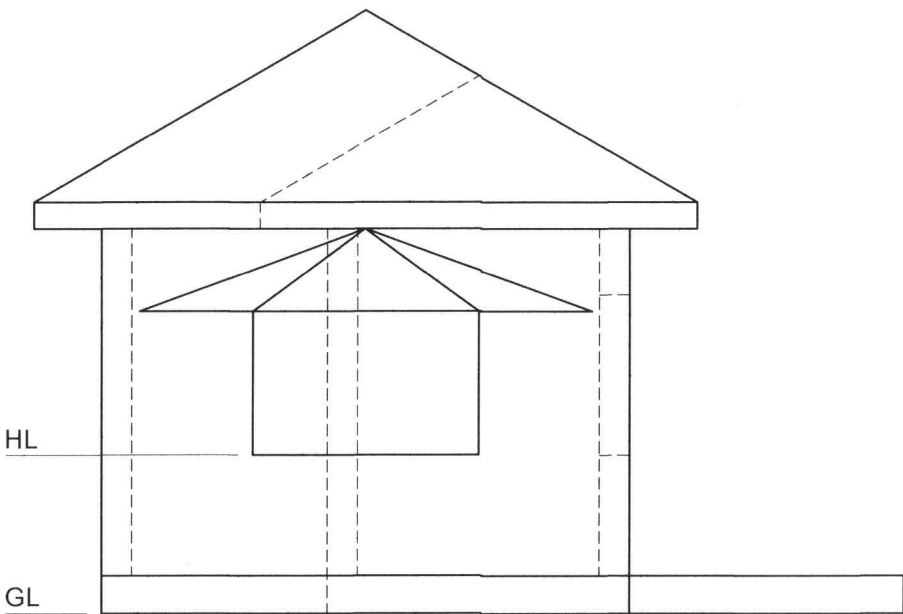
Given:
Three views of a tuck shop, with closed eaves and the information needed to draw a two-point perspective drawing
PP – Picture plane
HL – Horizon line
GL – Ground line
SP – Station point

- Instructions:**
Complete the perspective drawing.
- Align the drawing sheet with the ground line (GL).
 - Determine and label the vanishing points.
 - Show ALL construction.
 - Show depth at the door and windows.
 - NO hidden or internal detail is required. **[40]**

ASSESSMENT CRITERIA					
1	CONSTRUCTION	6			
2	WALLS	7 ½			
3	WINDOW + DOOR	10 ½			
4	ROOFS	11 ½			
5	ARC	4 ½			
PENALTIES (-)					
TOTAL		40			

PP

PP

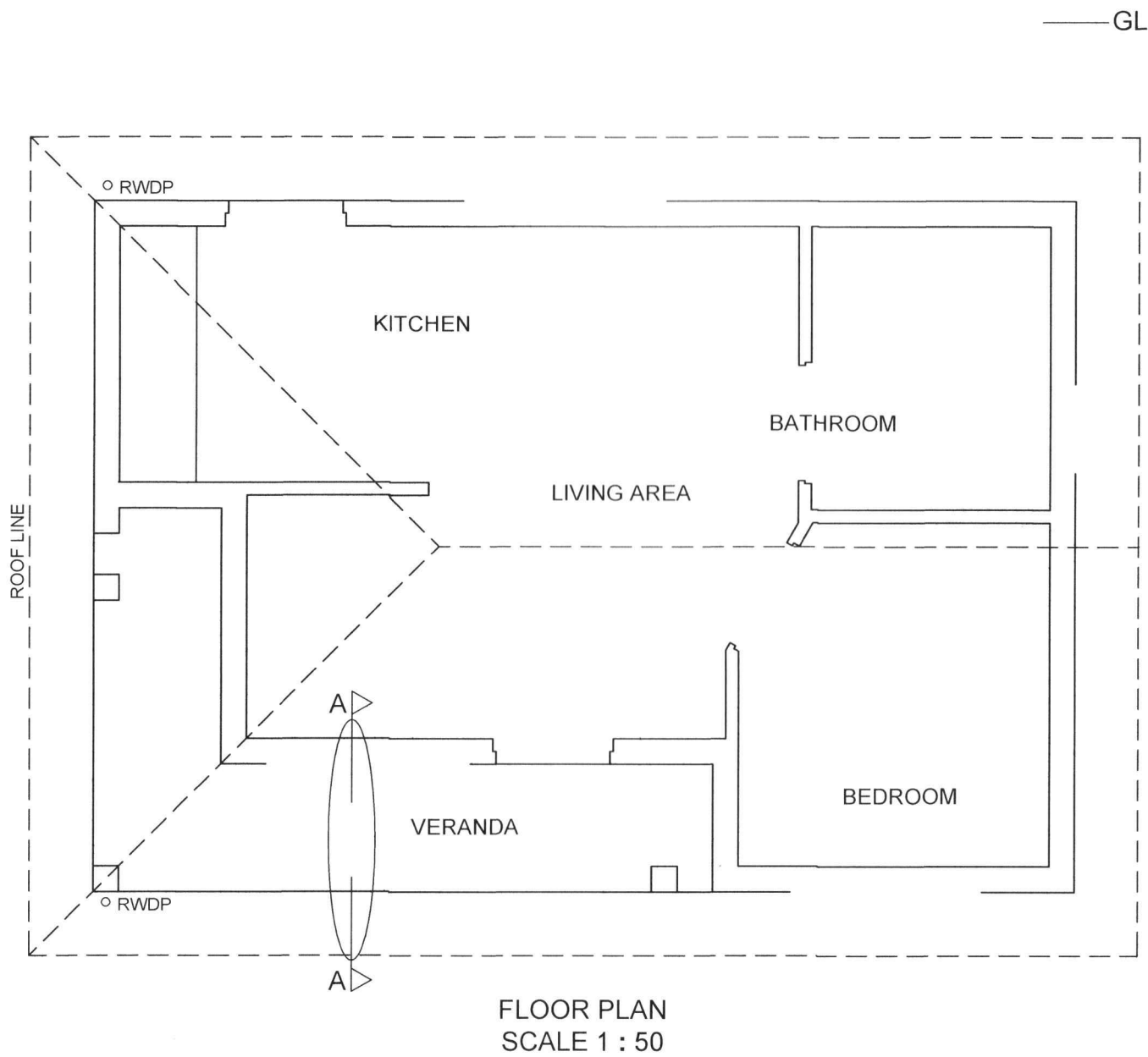


SP

EXAMINATION NUMBER	
EXAMINATION NUMBER	4



STAPLE



MARK ALLOCATION FOR SECTION OF ROOF		FOR OFFICIAL USE ONLY	
A		INCORRECT SCALE(S) USED	
B		NON-ALIGNMENT OF VIEWS	
C		VIEW(S) ROTATED	
D		SECTION VIEWED INCORRECTLY	
E		INCORRECT LETTERING	
F			
G			
H			
J			
TOTAL		TOTAL	

ASSESSMENT CRITERIA					
FLOOR PLAN					
		POSSIBLE	OBTAINED	SIGN	MODERATED
1	DOORS + WINDOWS	12			
2	FIXTURES	7 ¹ / ₂			
3	ELECTRICAL	10 ¹ / ₂			
4	HATCHING	3			
5	LABELS	2 ¹ / ₂			
SUBTOTAL		35 ¹ / ₂			
SOUTH ELEVATION					
1	ROOF + RWDP + BEAM	7			
2	WALLS + FFL + VERANDA	5			
3	DOOR + WINDOW	10			
4	LABELS	1			
SUBTOTAL		23			
DETAILED SECTION					
1	ROOF DETAIL	12			
2	SLAB + WALL+ VERANDA	10			
3	HATCHING	6 ¹ / ₂			
4	WINDOW	3 ¹ / ₂			
5	LABELS	1 ¹ / ₂			
SUBTOTAL		33 ¹ / ₂			
TOTAL		92			
PENALTIES (-)					
GRAND TOTAL					
EXAMINATION NUMBER					
EXAMINATION NUMBER					