

# HILLCREST HIGH SCHOOL

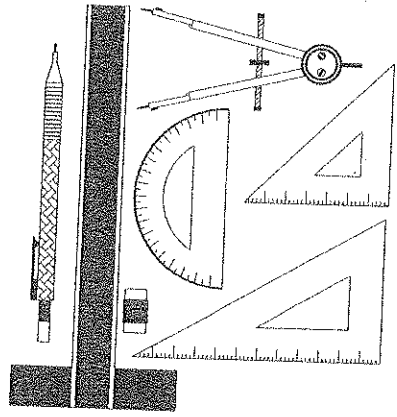
## TRIAL EXAMINATION ENGINEERING, GRAPHICS & DESIGN

GRADE 12  
2014  
PAPER 1

**MARKS: 200**    **TIME: 3 HOURS**

### INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 6 pages including the cover page and 4 questions.
2. All questions must be answered.
3. Unless specified otherwise, all questions are in First Angle Orthographic Projection.
4. Unless specified otherwise, all questions are to be completed to a scale of 1:1.
5. All answer sheets must be re-stapled in numerical order, even questions that are not attempted/blank.
6. All construction work must be shown, even if a stencil was used.
7. Print your examination number neatly on each page.
8. Use only the drawing sheets provided.
9. Your drawings should reflect neatness and accuracy.
10. All dimensions or detail not given may be assumed in good proportion.



QUESTION	SECTION	MARK	MAXIMUM
1	CIVIL ANALYTICAL		30
2	DEVELOPMENT		40
3	PERSPECTIVE		30
4	CIVIL ASSEMBLY		100
TOTAL			200
SYMBOL			100

NAME



TRIALS 2014  
GRADE 12 P1  
QUESTION 2  
40 MARKS

INTERPENETRATION

The figure shows the incomplete front view and complete top view of an OUTLET PIPE for a BRAAI. The auxiliary/helping views of the square prism are also shown in the front and top view.

The outlet pipe consists of an inclined square prism that penetrates a vertical hexagonal prism. The square prism lies offset to the hexagonal prism.

Smoke from the braai flows up the hexagonal prism and escapes out of the square prism.

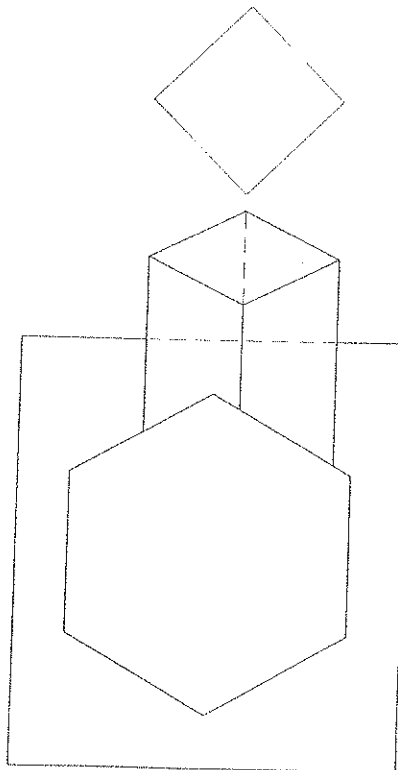
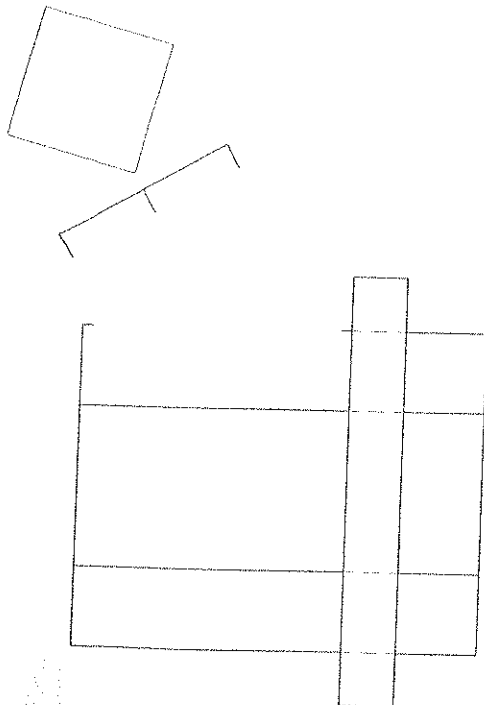
Draw the following:

- 2.1 The complete front view, clearly showing the interpenetration of the square prism into the hexagonal prism.
- 2.2 The development of the entire square prism.
- 2.3 The development of the two panels of the hexagonal prism that clearly show the hole of interpenetration.
- 2.4 Show all construction.

**ASSESSMENT CRITERIA**

You will be assessed on your ability to do the following:

- draw the points of interpenetration 6
- draw the lines of the square prism 7
- draw the hidden detail for the front view 6
- develop the entire square prism 11
- develop the hole in the hexagonal prism 8
- show construction 2



Pts	
6	
MPD	
8	
Unk	
7	
DGS	
11	
Total	
8	
Com	
2	

NAME \_\_\_\_\_

ANSWER SHEET 2

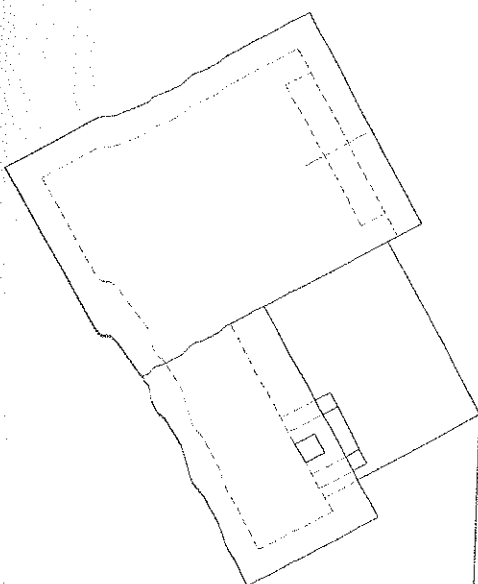
TRIALS 2014  
GRADE 12 P1  
QUESTION 3  
30 MARKS  
TWO POINT  
PERSPECTIVE

The figure below shows the views of a dwelling.  
Draw a neat TWO POINT PERSPECTIVE drawing of the dwelling.  
Show all construction.  
Label the vanishing points LVP and RVP.  
Do not show any hidden detail.

**ASSESSMENT CRITERIA**

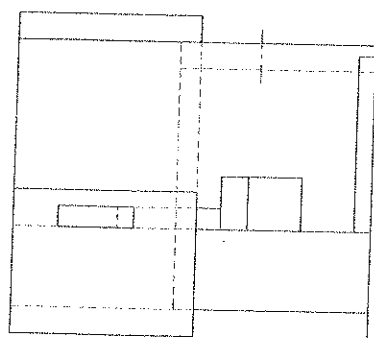
You will be assessed on your ability to do the following:

- project from top view to station point 1/2
- determine the vanishing points 1/2
- draw the two point perspective 2/9



PP

HL



GL

SP

PP

HL

GL

NAME

ANSWER SHEET 3

TRIALS 2014  
GRADE 12 PT  
QUESTION 4  
NO MARKS  
DRAWN  
ASSEMBLY

Details for a new ENTERTAINMENT ROOM are given as follows:  
An incomplete floor plan with window, door and plumbing fixture position, roof line & cutting plane A-A.  
An incomplete south elevation with window position and door position, window/door height, chimney height, ground level and floor.  
Door, Windows, Foundation, Braai, Fridge and Roof detail. Notes drawn to scale 1:50 on page 6 (answer sheet 4)

**Draw the following:**

- 1) the complete floor plan
  - 2) the complete south elevation
  - 3) the sectional elevation on cutting plane A-A
- answer this question on ANSWER SHEET 4.
- use the incomplete floor plan and a scale of 1:50.
  - all drawings must comply with SABS 01:13.

**FLOOR PLAN INSTRUCTIONS**

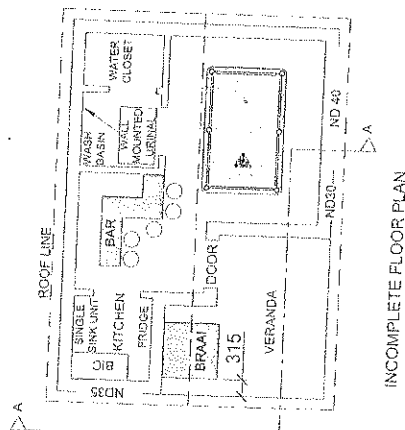
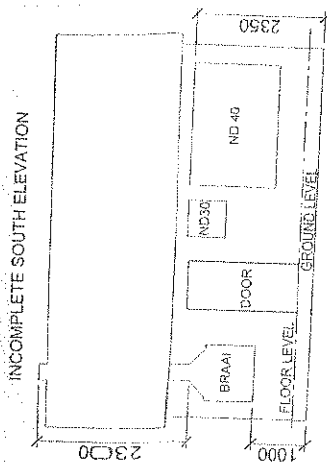
- Hatch all the external and internal walls.
- Draw the missing windows and door.
- Draw the braai in the correct position.
- Label the floor plan, print the scale.
- Insert the following electrical detail.
  - ▶ A TWC, 40 watt fluorescent tube light in the veranda,
  - ▶ a single wall mounted light on the northern wall in the bar,
  - ▶ a light for the kitchen,
  - ▶ a switched socket outlet on the southern wall in the kitchen,
  - ▶ one switch for kitchen, veranda and bar lights,
  - ▶ a single sink unit and fridge in the kitchen.
- Draw the following plumbing detail in the bathroom:
  - ▶ A water closet, a wall mounted urinal, a wash basin.
- (use the given positions)
- Print the room designation and floor finish for the veranda only!

**SOUTH ELEVATION INSTRUCTIONS**

- Draw the outside walls.
- Draw the outside door and frame showing the given detail.
- Draw the windows, clearly showing the openings.
- Draw the window sills for ND40 and ND35 windows only.
- Draw the braai and visible parts of the chimney.
- Draw the roof detail including the fascia board. You must show some detail for the corrugated steel sheeting.
- Label the ground level.
- Draw and label the floor level.

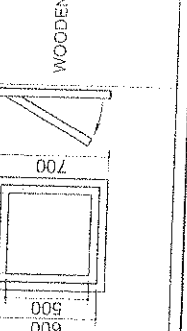
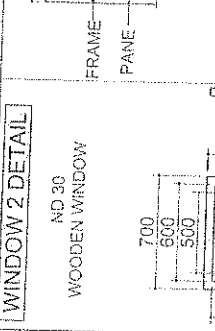
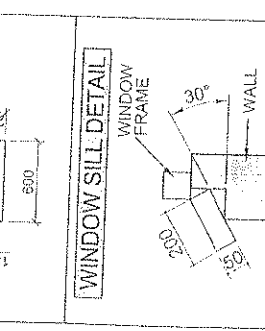
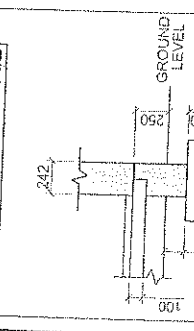
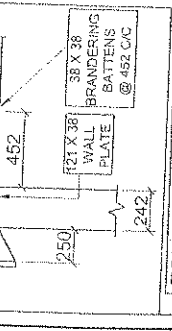
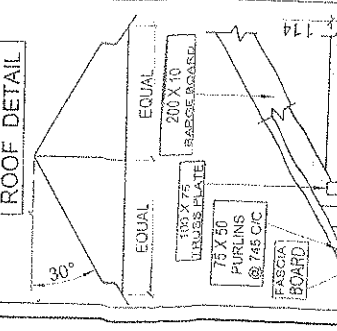
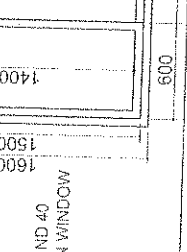
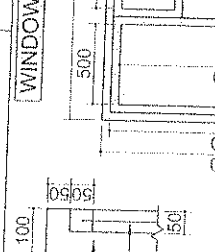
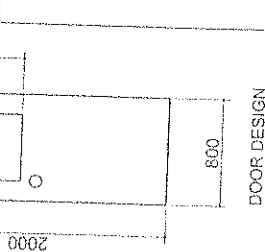
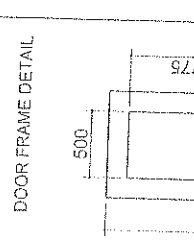
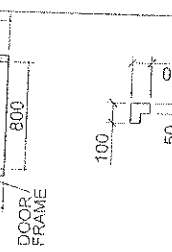
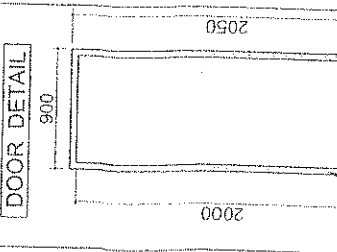
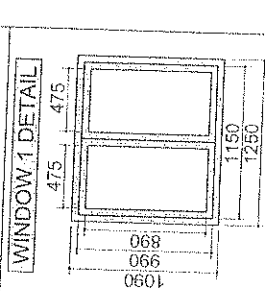
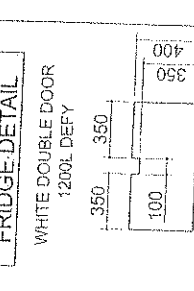
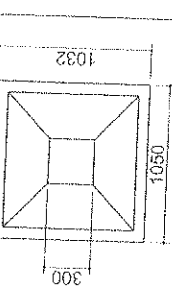
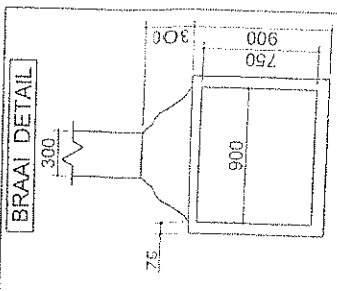
**SECTIONAL ELEVATION INSTRUCTIONS**

- Only section areas where the cutting plane passes.
- Draw the outside view for areas that are not sectioned.
- Complete the foundation details.
- Draw the floor slab details:
  - ▶ use 10mm screed and 150mm hardcore
- Draw the sectional window ND40:
  - ▶ use 200 X 75 concrete lintels above window
- Complete the roof details:
  - ▶ draw the roof, roof truss, rafter plate, wall plate, purlins, ceiling battens, ceiling board,
  - ▶ use 10mm corrugated steel sheeting for the roof and use 6mm ceiling boards.
- Complete all hatch detail. All substructure hatching may be drawn in freehand.
- Label the sectional elevation, damp proof course (for the floor and the window), floor level and ground level.
- Draw the floor level.
- Draw the braai detail that can be seen.
- Draw the barge board on the side of the roof that is not sectioned.
- Draw the visible window with window sill



**NOTES**

- FLOOR FINISHES**  
 BAR & POOL AREA - VELVET BELGOTEX CARPET  
 BATHROOM- PRIMROSE PEARL CERAMIC TILES  
 VERANDA - OAK LAMINATED WOOD  
 KITCHEN - PRIMROSE SAGE CERAMIC TILES
- CEILING HEIGHT**  
 THE HEIGHT FROM THE TOP OF THE CONCRETE SLAB TO CEILING BOARD = 2900
- DOORS**  
 ONLY DRAW THE EXTERNAL DOOR, THE EXTERNAL DOOR OPENS OUTWARDS. DO NOT INSERT DOORS IN THE KITCHEN, TOILET AND BATHROOM ENTRANCE.
- WINDOW 2 (ND 30)**  
 DO NOT DRAW A WINDOW SILL FOR THIS WINDOW.
- FASCIA BOARD**  
 THE FASCIA BOARD IS 187 X 38
- BRAAI**  
 THE STAINLESS STEEL SUPER DELUX BRAAI 1200 IS MOUNTED ONTO THE VERANDA WALL. THE CHIMNEY CHUTE EXITS OUT THE TOP OF THE ROOF. THE ROOFING IS POSITIONED AROUND THE CHIMNEY CHUTE ON THE ROOF. THE BRAAI CHIMNEY CHUTE IS 2300 LONG.



TRIALS 2014  
GRADE 12 P1

QUESTION 4

100 MARKS

CIVIL  
ASSEMBLY

ASSESSMENT CRITERIA

SECTIONAL ELEVATION

1	CEILING BATTEN	1
2	WALL PLATE	1
3	CEILING BOARD	1
4	TRUSS PLATES	1
5	ROOF TRUSS	3
6	PURLINS	2
7	ROOF	1
8	SECTIONED WALL	3
9	SECTIONAL WINDOW	9
10	FASCIA BOARD	1
11	FOUNDATION + FLOOR	6
12	LABELS	6
13	OUTSIDE WALLS	7
14	BRAAI & CHIMNEY	11
15	OUTSIDE WINDOW	11
16	ROOF & BARGE	6
17	HATCHING	10

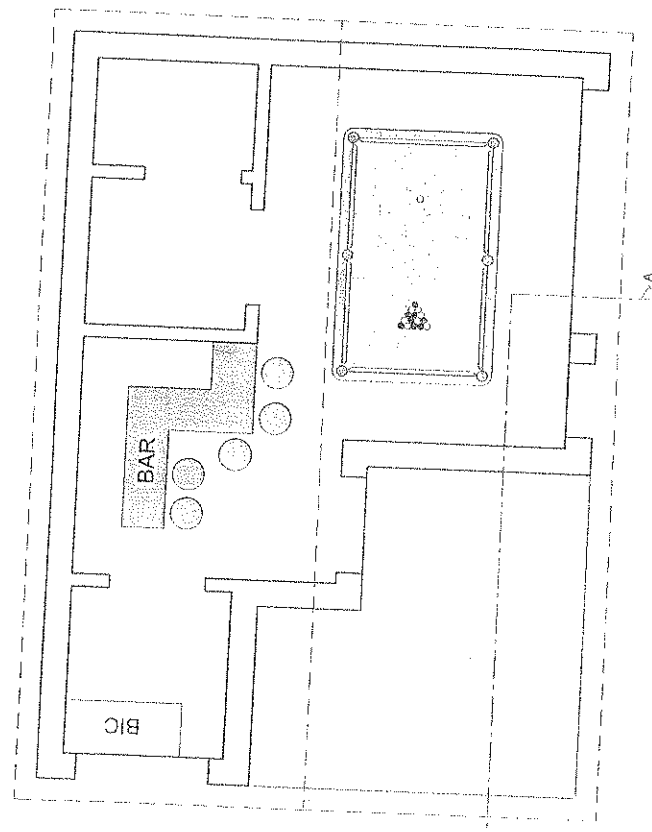
FLOORPLAN

18	WINDOWS	8
19	DOORS	4
20	BRAAI	15
21	LABELS	4
22	ELECTRICAL	8
23	PLUMBING & FRIDGE	10
24	HATCHING	9

SOUTH ELEVATION

26	WINDOW - ND 30	6
27	WINDOW - ND 40	16
28	DOOR	7
29	WALLS	5
30	ROOF & FASCIA	7
31	BRAAI & CHIMNEY	15
32	LABELS	4
33	WINDOW SILL - ND 35	2

TOTAL		200
TOTAL		100



NAME

ANSWER SHEET 4