



QUESTION 2: SOLID GEOMETRY

Given:

- The front view and top view of a right regular pentagonal pyramid with one base edge in contact with a base edge of a right regular hexagonal prism. The prism is centrally pierced by a right square prismatic hole.
- Cutting plane P-P, that cuts both solids

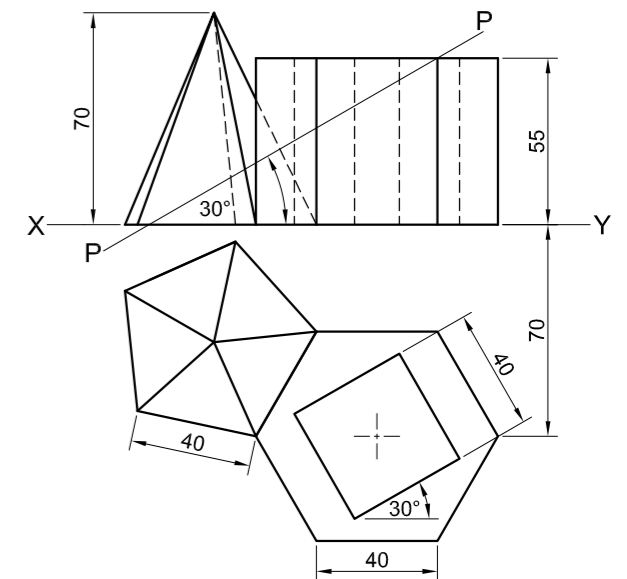
Instructions:

Draw, to scale 1 : 1, the following views of both solids:

- 2.1 The given front view
- 2.2 A sectional top view
- 2.3 A sectional left view

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

[38]



ASSESSMENT CRITERIA			
1	SECTIONAL TOP VIEW	15 1/2	
2	FRONT VIEW	8 1/2	
3	SECTIONAL LEFT VIEW	14	
PENALTIES (-)			
TOTAL		38	
EXAMINATION NUMBER			
EXAMINATION NUMBER			
EXAMINATION NUMBER			3



QUESTION 2: SOLID GEOMETRY

Given:

- The front view and top view of a right square pyramid that rests against a right regular pentagonal prism
- An auxiliary view of the right square pyramid
- Cutting plane R-R

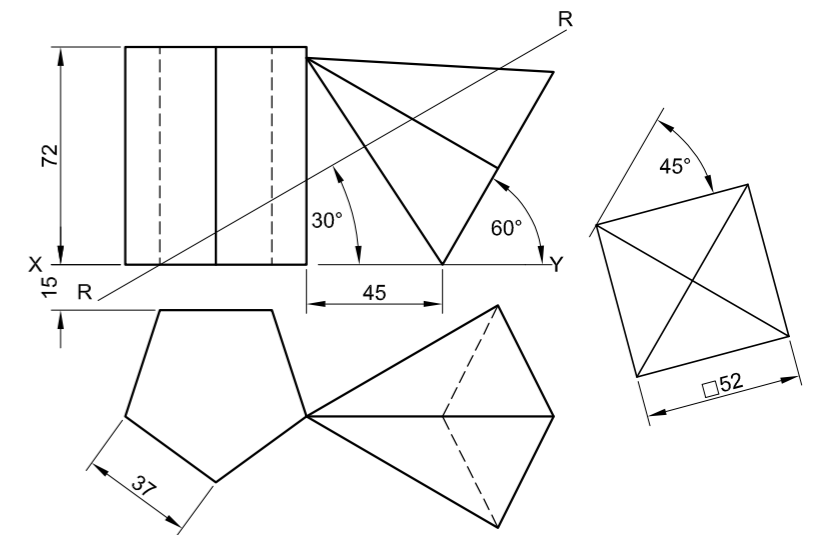
Instructions:

Draw, to scale 1 : 1, the following views of both solids:

- 2.1 The given front view
- 2.2 A sectional top view with the parts above cutting plane R-R removed
- 2.3 A sectional right view with the parts below cutting plane R-R removed
- 2.4 The true shape of the cut surfaces of BOTH solids

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

[37]



ASSESSMENT CRITERIA				
1	FRONT VIEW	7		
2	SECTIONAL TOP VIEW	12 1/2		
3	SECTIONAL RIGHT VIEW	10		
4	TRUE SHAPE	6 1/2		
5	CORRECT HATCHING	1		
PENALTIES (-)				
TOTAL		37		
EXAMINATION NUMBER				
EXAMINATION NUMBER				
				3



QUESTION 2: SOLID GEOMETRY

Given:

- The front view and the top view of a right regular hexagonal pyramid resting with its base on an edge of a truncated right square prism. The prism is centrally pierced by a right equilateral triangular prismatic hole.
- An auxiliary view of the base of the hexagonal pyramid
- Both solids are cut by cutting plane D-D

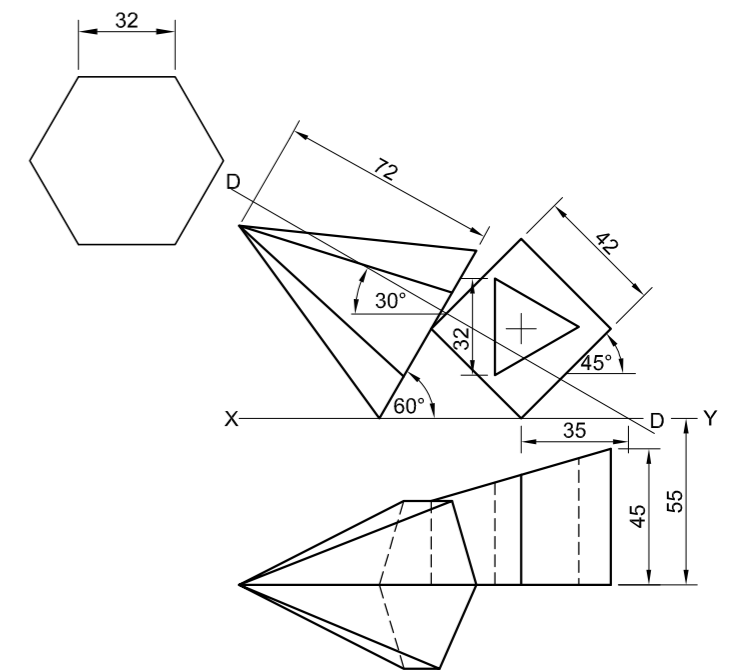
Instructions:

Draw, to scale 1 : 1, the following views of both solids:

- 2.1 The given front view
- 2.2 A sectional top view on cutting plane D-D
- 2.3 The left view
- 2.4 The true shape of the cut surface of the truncated prism

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

[40]



ASSESSMENT CRITERIA			
1	FRONT VIEW	7 1/2	
2	SECTIONAL TOP VIEW	14	
3	LEFT VIEW	12 1/2	
4	TRUE SHAPE	6	
PENALTIES (-)			
TOTAL		40	
EXAMINATION NUMBER			
EXAMINATION NUMBER			
			3



QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:

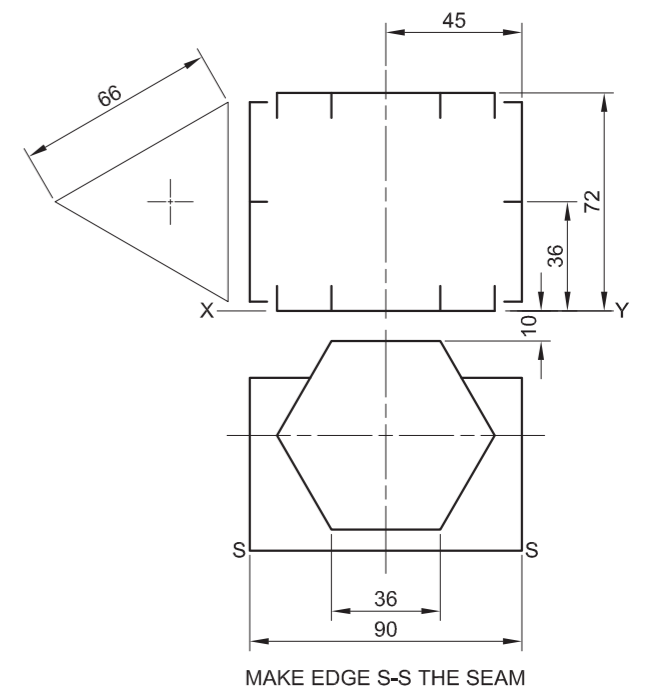
- The top view and incomplete front view of a connecting piece for a ventilation system. The connecting piece consist of a right equilateral triangular tube and a right regular hexagonal tube. The axes of both tubes lie in a common vertical plane.
- An auxiliary view of the triangular tube.

Instructions:

Draw, to scale 1 : 1, the following views of the two tubes:

- 2.1 The given top view
- 2.2 The right view
- 2.3 The complete front view, clearly showing the curve of interpenetration
- 2.4 The development of the triangular tube. Make edge 'S-S' the seam.

- Planning is essential.
- Show ALL hidden detail and folding lines.
- Show ALL construction. **[38]**



ASSESSMENT CRITERIA			
1	TOP VIEW	6	
2	RIGHT VIEW	5	
3	FRONT VIEW	16 $\frac{1}{2}$	
4	DEVELOPMENT	10 $\frac{1}{2}$	
PENALTIES (-)			
TOTAL		38	
EXAMINATION NUMBER			
EXAMINATION NUMBER			
			3





QUESTION 2: SOLID GEOMETRY

Given:

- The front view of a right regular hexagonal prism with a right conical hole
- An auxiliary view
- Horizontal cutting plane C-C

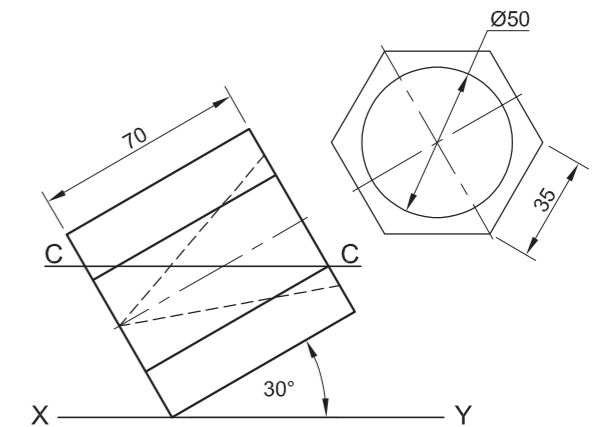
Instructions:

Draw, to scale 1 : 1, the following views of the solid:

- 2.1 The given front view
- 2.2 A sectional top view
- 2.3 The right view

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

[36]



ASSESSMENT CRITERIA				
1	AUXILIARY VIEW	2		
2	FRONT VIEW	5		
3	SECTIONAL TOP VIEW	16		
4	RIGHT VIEW	13		
PENALTIES (-)				
TOTAL		36		
EXAMINATION NUMBER				
EXAMINATION NUMBER				
				3





QUESTION 2: SOLID GEOMETRY

Given:

- The front view and the top view of a right regular hexagonal pyramid and a right square pyramid
- Cutting plane S-S

Specifications:

- The two solids do not touch
- Both solids are cut by cutting plane S-S

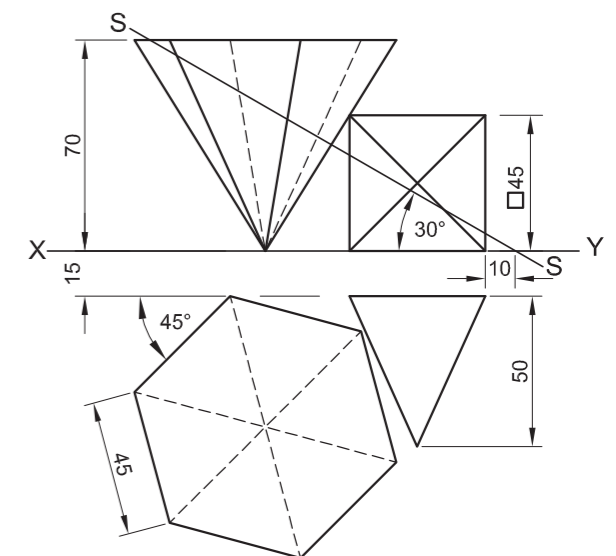
Instructions:

Draw, to scale 1 : 1, the following views of the TWO solids:

- 2.1 The given front view
- 2.2 A sectional top view
- 2.3 A sectional right view
- 2.4 The true shape of the cut surface of the hexagonal pyramid

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

[38]



ASSESSMENT CRITERIA			
1	FRONT VIEW	7½	
2	SECTIONAL TOP VIEW + CONSTRUCTION	13½	
3	SECTIONAL RIGHT VIEW	11½	
4	TRUE SHAPE	5½	
PENALTIES (-)			
TOTAL		38	
EXAMINATION NUMBER			
EXAMINATION NUMBER			
			3





QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:

- The top view and incomplete front view of a right regular hexagonal prism that has been shaped to fit over an equilateral triangular prism. The axes of both solids lie in a common vertical plane.
- An auxiliary view of the triangular prism

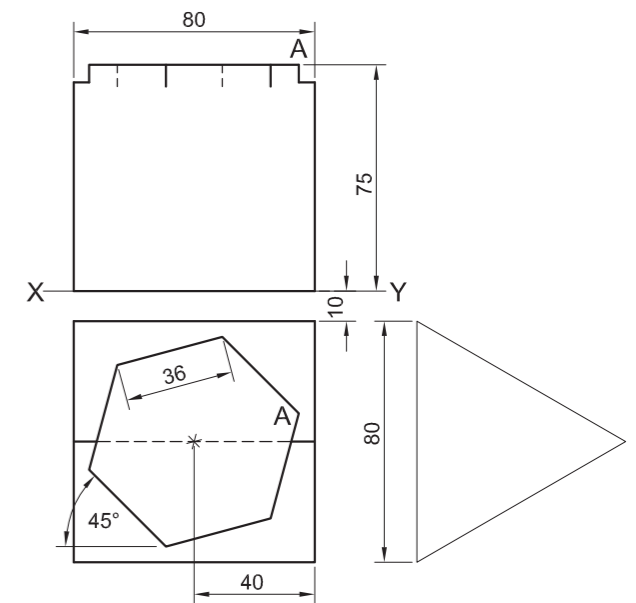
Instructions:

Draw, to scale 1 : 1, the following views of the TWO solids:

- 2.1 The given top view
- 2.2 The right view
- 2.3 The complete front view, clearly showing the curve of interpenetration
- 2.4 The development of the surface of the hexagonal prism. Make edge 'A' the seam.

- Planning is essential.
- Show ALL hidden detail and fold lines.
- Show ALL construction.

[37]



EDGE 'A' THE SEAM

ASSESSMENT CRITERIA				
1	TOP VIEW	7½		
2	RIGHT VIEW	5		
3	FRONT VIEW	13		
4	DEVELOPMENT	11½		
PENALTIES (-)				
TOTAL		37		
EXAMINATION NUMBER				
EXAMINATION NUMBER				
				3





QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:

- The incomplete front view and the top view of a hollow right square prism with a right cylindrical branch pipe. The axes of both pipes lie in a common vertical plane.
- An auxiliary view of the branch pipe

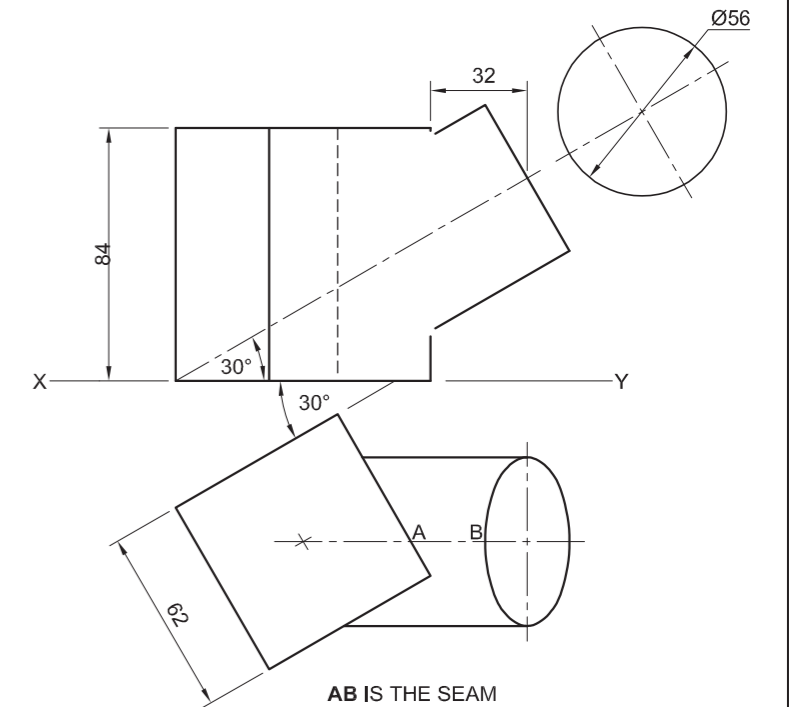
Instructions:

Draw, to scale 1 : 1, the following views of the TWO pipes:

- 2.1 The given top view
- 2.2 The complete front view, clearly showing the curve of interpenetration
- 2.3 The development of the cylindrical branch pipe. Make **AB** the seam.

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

[37]



ASSESSMENT CRITERIA			
1	TOP VIEW	10 1/2	
2	FRONT VIEW + CIRCLE DIVISION	6 1/2	
3	CURVE OF INTERPENETRATION	9	
4	DEVELOPMENT	11	
PENALTIES (-)			
TOTAL		37	
EXAMINATION NUMBER			
EXAMINATION NUMBER			
			3





QUESTION 2: SOLID GEOMETRY

Given:

- The front view of a right equilateral triangular pyramid and a right regular hexagonal prism
- The top view of the pyramid and the axis of the prism
- An auxiliary view of the prism
- Cutting plane A-A

Specifications:

- The prism leans against the pyramid.
- Both solids are cut by cutting plane A-A.

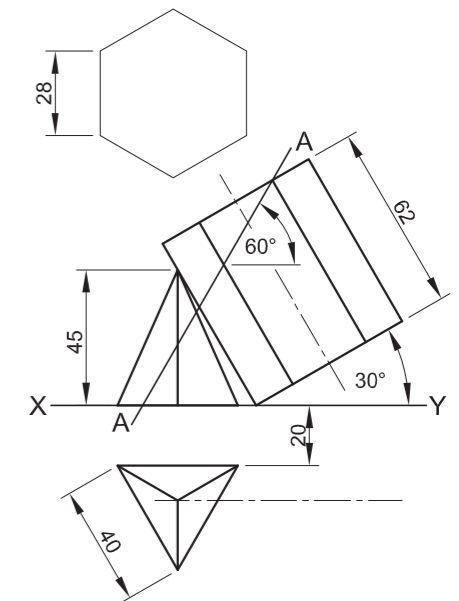
Instructions:

Draw, to scale 1 : 1, the following views of the TWO solids:

- 2.1 The given front view
- 2.2 A sectional top view
- 2.3 A sectional left view
- 2.4 The true shape of the cut surfaces

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

[40]



ASSESSMENT CRITERIA				
1	CONSTRUCTION	1		
2	FRONT VIEW	5 ½		
3	SECTIONAL TOP VIEW	14 ½		
4	SECTIONAL LEFT VIEW	12 ½		
5	TRUE SHAPE	6 ½		
PENALTIES (-)				
TOTAL		40		
EXAMINATION NUMBER				
EXAMINATION NUMBER				
				3





QUESTION 2: SOLID GEOMETRY

Given:

- The incomplete front view and the top view of a hollow open-ended right square prism that has been shaped to fit around a hollow open-ended right regular hexagonal prism. The axes of both hollow prisms lie in a common vertical plane.
- An auxiliary view of the square prism

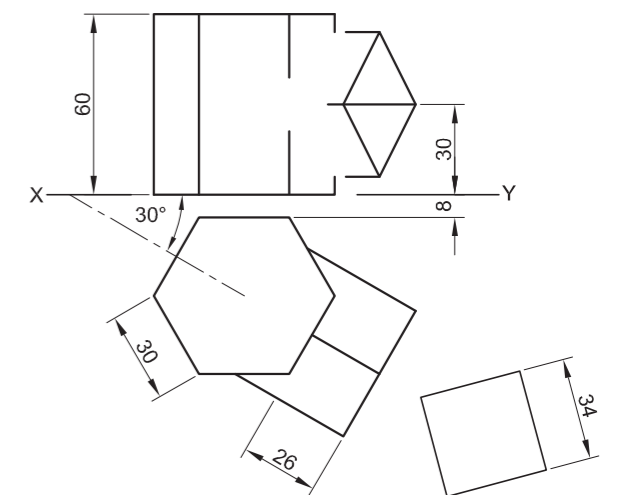
Instructions:

Draw, to scale 1 : 1, the following:

- 2.1 The given top view
- 2.2 The complete front view, clearly showing the curve of interpenetration
- 2.3 The complete right view, clearly showing the curve of interpenetration

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

[37]



ASSESSMENT CRITERIA			
1	TOP VIEW	7	
2	FRONT VIEW	14 $\frac{1}{2}$	
3	RIGHT VIEW	15 $\frac{1}{2}$	
PENALTIES (-)			
TOTAL		37	
EXAMINATION NUMBER			
EXAMINATION NUMBER			
			3





QUESTION 2: SOLID GEOMETRY

Given:

- The front view and the top view of a right regular hexagonal prism with a right regular hexagonal pyramidal hole
- Cutting plane A-A

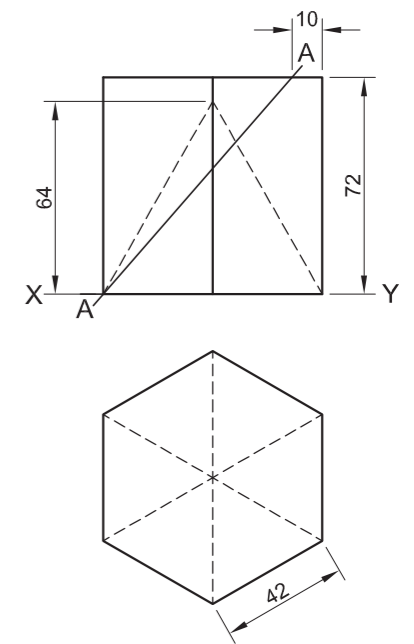
Instructions:

Draw, to scale 1 : 1, the following views of the solid:

- 2.1 The given front view
- 2.2 A sectional top view
- 2.3 A sectional left view
- 2.4 The true shape of the cut surface

- Show ALL hidden detail.
- Show ALL construction.

[35]



ASSESSMENT CRITERIA				
1	FRONT VIEW	4		
2	SECTIONAL TOP VIEW	9½		
3	SECTIONAL LEFT VIEW	10½		
4	TRUE SHAPE	6		
5	HATCHING	5		
PENALTIES (-)				
TOTAL		35		
EXAMINATION NUMBER				
EXAMINATION NUMBER				
				3





QUESTION 2: TRANSITION PIECE

Given:

The front view and top view of a regular hexagonal to rectangular transition piece

Instructions:

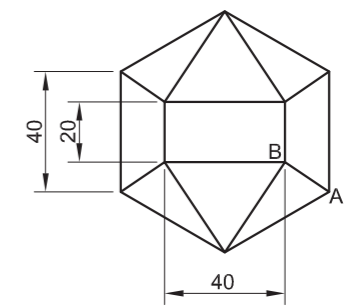
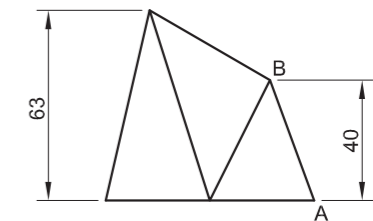
Draw, to scale 1 : 1, the following views of the transition piece:

- 2.1 The given top view
- 2.2 The given front view
- 2.3 The development

NOTE:

- Make AB the seam.
- Show ALL construction.

[38]



AB - SEAM

ASSESSMENT CRITERIA				
1	TOP VIEW	8		
2	FRONT VIEW	3		
3	TRUE LENGTH	8		
4	DEVELOPMENT	19		
PENALTIES (-)				
TOTAL		38		
EXAMINATION NUMBER				
EXAMINATION NUMBER				
				3





QUESTION 2: DEVELOPMENT

Given:

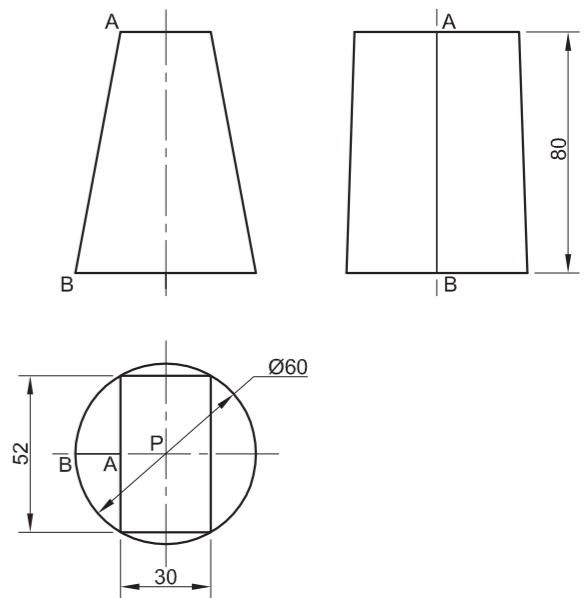
- The front view, top view and left view of a rectangular to round transition piece with seam AB
- The position of point P on the drawing sheet

Instructions:

Draw, to scale 1 : 1, the following views of the transition piece:

- 2.1 The given front view and top view
- 2.2 The development of the transition piece

- Make AB the seam.
- Show ALL construction. **[36]**



P
+

ASSESSMENT CRITERIA			
1	TOP VIEW	4 ½	
2	FRONT VIEW	2 ½	
3	TL CONSTRUCTION	6	
4	DEVELOPMENT	23	
PENALTIES (-)			
TOTAL		36	
EXAMINATION NUMBER			
EXAMINATION NUMBER			
			3





QUESTION 2: SOLID GEOMETRY

Given:

- The front view and the top view of a right regular hexagonal pyramid and a right equilateral triangular prism. The axes of both solids lie in a common vertical plane.
- An auxiliary view of the triangular prism

Specifications:

- The two solids do not touch.
- Both solids are cut by cutting plane AA.

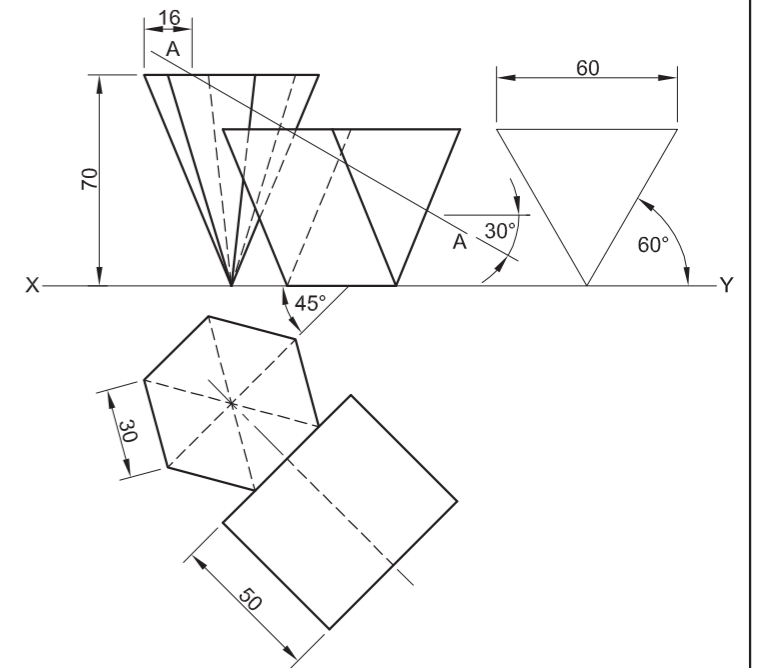
Instructions:

Draw, to scale 1 : 1, the following views of the TWO solids:

- 2.1 The given front view
- 2.2 The sectional top view
- 2.3 The sectional right view

- Planning is essential.
- Show ALL necessary construction.
- Show ALL hidden detail on all three views.

[37]



ASSESSMENT CRITERIA				
1	CONSTRUCTION	3		
2	FRONT VIEW	9		
3	SECTIONAL TOP VIEW	11		
4	SECTIONAL RIGHT VIEW	14		
PENALTIES (-)				
TOTAL		37		
EXAMINATION NUMBER				
EXAMINATION NUMBER				
				3





QUESTION 2: SOLID GEOMETRY

Given:

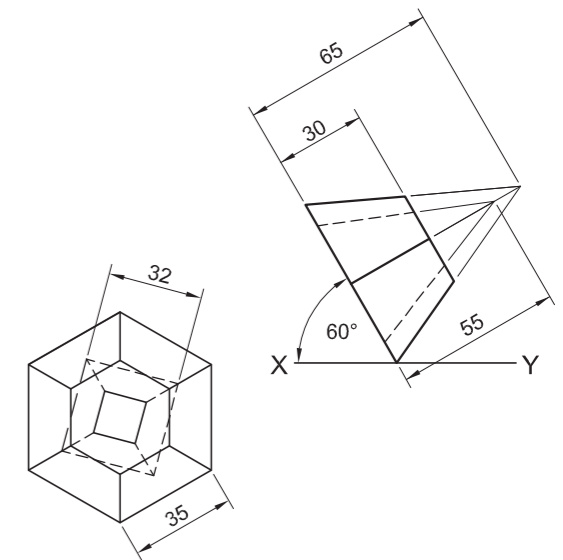
The front view and an auxiliary view of a truncated right regular hexagonal pyramid with a centrally placed right square pyramidal hole.

Instructions:

Draw, to scale 1 : 1, the following views of the solid:

- 2.1 The given front view
- 2.2 The top view
- 2.3 The left view

- Show ALL hidden detail.
- Show ALL necessary construction. **[40]**



ASSESSMENT CRITERIA			
1	FRONT AND AUX. VIEW	7½	
2	TOP VIEW	15	
3	LEFT VIEW	17½	
PENALTIES (-)			
TOTAL		40	
EXAMINATION NUMBER			
EXAMINATION NUMBER			
			3





QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:

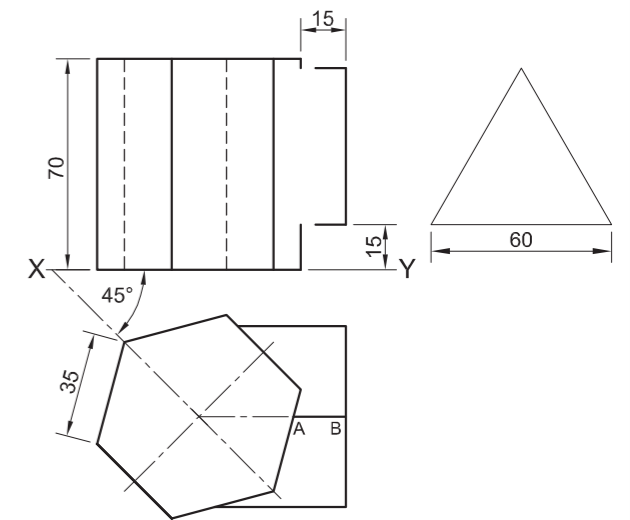
- The incomplete front view and top view of an equilateral triangular prism that has been shaped to fit around a right regular hexagonal prism. The axes of both prisms lie in a common vertical plane.
- An auxiliary view of the triangular prism.

Instructions:

Draw, to scale 1 : 1, the following:

- 2.1 The given top view
- 2.2 The complete front view clearly showing the curve of interpenetration
- 2.3 The complete right view
- 2.4 The development of the surface of the triangular prism
Make **AB** the seam.

- Show ALL hidden detail.
- Show ALL necessary construction. **[35]**



AB IS THE SEAM.

ASSESSMENT CRITERIA			
1	TOP VIEW	6	
2	FRONT VIEW	11	
3	RIGHT VIEW	7	
4	DEVELOPMENT	11	
PENALTIES (-)			
TOTAL		35	
EXAMINATION NUMBER			
EXAMINATION NUMBER			
EXAMINATION NUMBER			3





QUESTION 2: TRANSITION PIECE

Given:

The front view and the top view of a square-to-irregular four-sided transition piece.

Instructions:

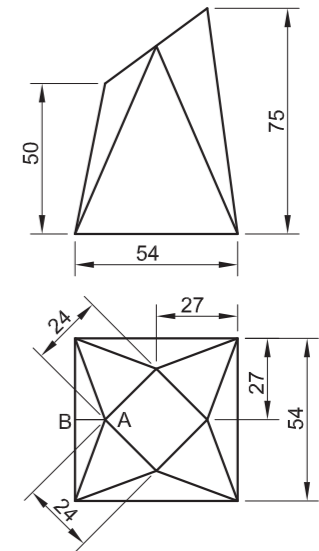
Draw, to scale 1 : 1, the following views of the transition piece:

- 2.1 The given top view
- 2.2 The given front view
- 2.3 The development of the transition piece

NOTE:

AB is the seam.

[36]



ASSESSMENT CRITERIA				
1	FRONT AND TOP VIEW	11		
2	TL CONSTRUCTION	8		
3	DEVELOPMENT	17		
PENALTIES (-)				
TOTAL		36		
EXAMINATION NUMBER				
EXAMINATION NUMBER				3





QUESTION 2: SOLID GEOMETRY

Given:

The front view and the top view of a right regular hexagonal prism with a right square hole and a right regular pentagonal pyramid

Specifications:

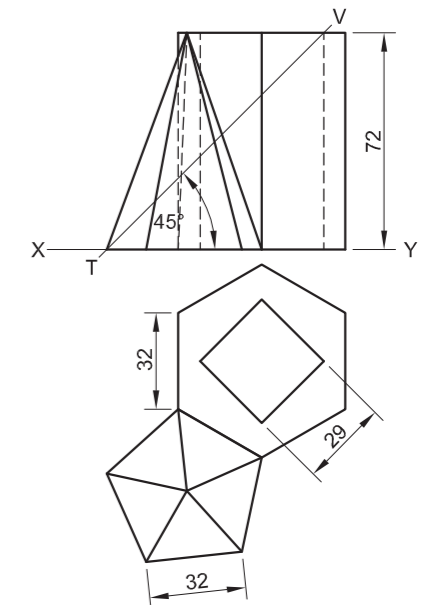
- One base edge of the hexagonal prism is in contact with one base edge of the pentagonal pyramid.
- Both solids are cut by a cutting plane VT.

Instructions:

Draw, to scale 1 : 1, the following views of the TWO solids:

- 2.1 The given front view
- 2.2 The sectional top view
- 2.3 The sectional left view. Show ALL hidden detail.

Show ALL necessary construction. **[38]**



ASSESSMENT CRITERIA			
1	CONST. + FRONT VIEW	7	
2	SECTIONAL TOP VIEW	12½	
3	SECTIONAL LEFT VIEW	15	
4	HATCHING	3½	
PENALTIES (-)			
TOTAL		38	
EXAMINATION NUMBER			
EXAMINATION NUMBER			
			3





QUESTION 2: SOLID GEOMETRY

Given:

- The front view and the top view of a right equilateral triangular prism and a right regular octagonal pyramid
- The auxiliary view of the triangular prism
- The position of base edge 'A-B' on the answer sheet

Specifications:

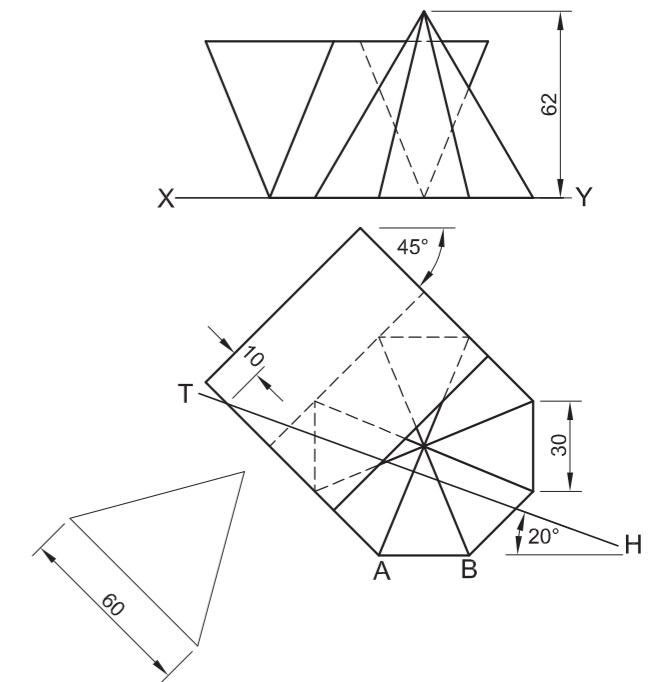
One face of the triangular prism is in contact with one face of the octagonal pyramid. Both solids are cut by a cutting plane HT.

Instructions:

Draw, to scale 1 : 1, the following views of the TWO solids:

- 2.1 The given top view
- 2.2 A sectional front view on cutting plane HT
- 2.3 The true shape of the cut surfaces

- Show ALL necessary construction and projection.
- Show ALL hidden detail. **[38]**



A ————— B

ASSESSMENT CRITERIA			
1	GIVEN TOP VIEW	7	
2	FRONT VIEW	21	
3	TRUE SHAPE	10	
TOTAL		38	
EXAMINATION NUMBER			
EXAMINATION NUMBER			3



QUESTION 2: TRANSITION PIECE

Given:

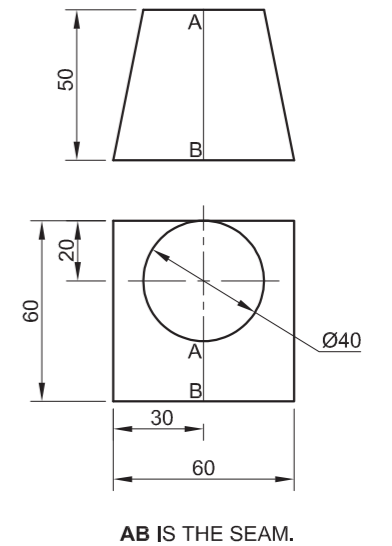
The front view and top view of a square-to-round transition piece.

Instructions:

Draw, to scale 1 : 1, the following:

- 2.1 The given front view and top view
- 2.2 The development of the surface of the transition piece. Make **AB** the seam.

Show ALL necessary construction. **[35]**



ASSESSMENT CRITERIA				
1	GIVEN	5		
2	CONSTRUCTION	4		
3	TRUE LENGTHS	8		
4	DEVELOPMENT	18		
TOTAL		35		
EXAMINATION NUMBER				
EXAMINATION NUMBER				
				3





QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:

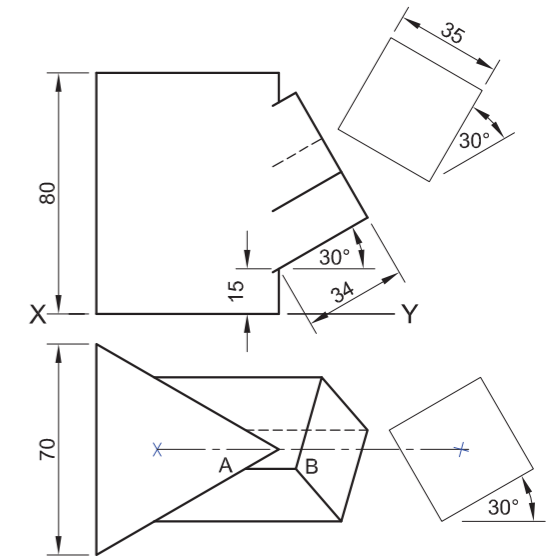
- The incomplete front view and top view of a right square prism that has been shaped to fit around a right equilateral triangular prism. The axes of both prisms lie in a common vertical plane.
- The auxiliary views of the square prism.

Instructions:

Draw, to scale 1 : 1, the following:

- 2.1 The given top view
- 2.2 The complete front view clearly showing the curve of interpenetration
- 2.3 The development of the surface of the square prism.
Make **AB** the seam.

- Show ALL hidden detail.
- Show ALL necessary construction and fold lines. **[33]**



AB IS THE SEAM.

ASSESSMENT CRITERIA			
1	TOP VIEW	7½	
2	FRONT VIEW	14	
3	DEVELOPMENT	11½	
TOTAL		33	
EXAMINATION NUMBER			
EXAMINATION NUMBER			3





QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:

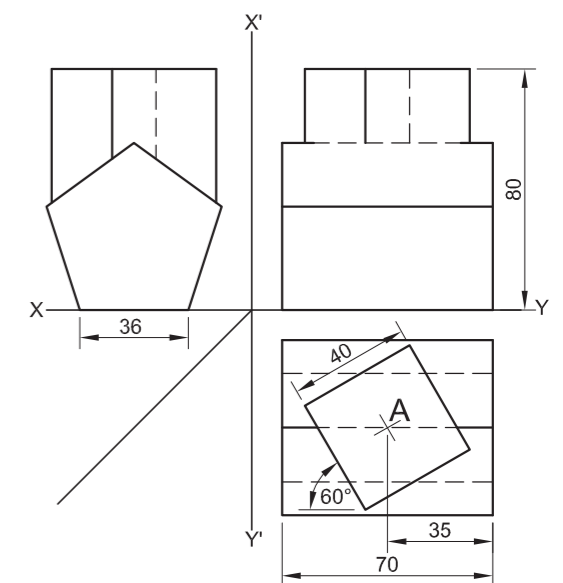
- The incomplete front view, right view and top view of a regular square prism that has been shaped to fit around a right regular pentagonal prism. The axes of both prisms lie in a common vertical plane.
- The position of point A.

Instructions:

Draw, to scale 1 : 1, the following views of the TWO prisms:

- 2.1 The given top view
- 2.2 The given right view
- 2.3 The complete front view, clearly showing the curve of interpenetration
- 2.4 Develop the surface of the square prism.

Show ALL hidden detail and fold lines. [37]



A

ASSESSMENT CRITERIA			
1	TOP VIEW	7	
2	RIGHT VIEW	8	
3	FRONT VIEW	13	
4	DEVELOPMENT	9	
TOTAL		37	
EXAMINATION NUMBER			
EXAMINATION NUMBER			
EXAMINATION NUMBER			3





QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:

- The incomplete front view and the top view of a regular square prism that has been shaped to fit around a right regular hexagonal prism. The axes of both prisms lie in a common vertical plane.
- The auxiliary view of the square prism
- The position of point O on the drawing sheet

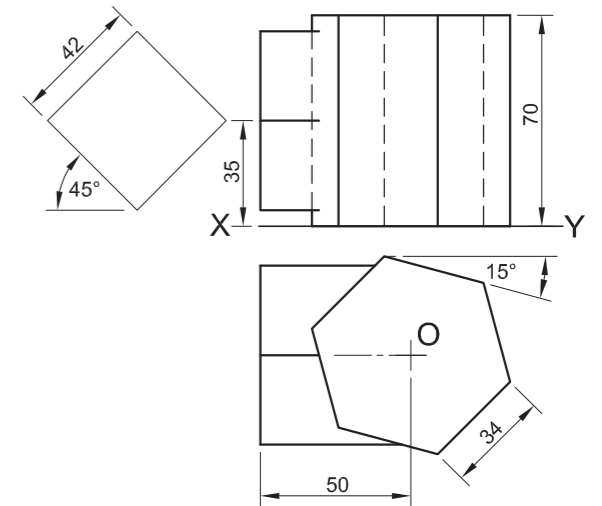
Instructions:

Draw, to scale 1 : 1, the following views of the TWO prisms:

- 2.1 The given top view
- 2.2 The left view
- 2.3 The complete front view, clearly showing the curve of interpenetration
- 2.4 Develop the surfaces of the square prism.

Show ALL hidden detail and fold lines.

[35]



+O

ASSESSMENT CRITERIA			
1	TOP VIEW	6	
2	LEFT VIEW	5	
3	FRONT VIEW	14	
4	DEVELOPMENT	10	
TOTAL		35	
EXAMINATION NUMBER			
EXAMINATION NUMBER			3





QUESTION 2: DEVELOPMENT

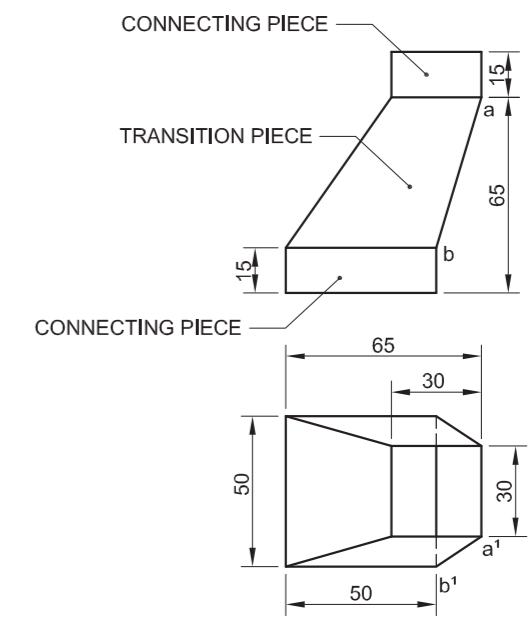
Given:

The front view and top view of a portion of a duct showing a square-to-square transition piece with two connecting pieces.

Instructions:

- 2.1 Draw, to scale 1 : 1, the given front view and top view of the portion of the duct.
- 2.2 Develop the surface of the transition piece ONLY. Make edge AB the seam.

Show ALL necessary construction and fold lines. **[34]**



EDGE **AB** IS THE SEAM.

ASSESSMENT CRITERIA			
1	FRONT VIEW + TOP VIEW	11	
2	TRUE LENGTH METHOD	10	
3	DEVELOPMENT	13	
TOTAL		34	
EXAMINATION NUMBER			
EXAMINATION NUMBER			3



QUESTION 2: DEVELOPMENT

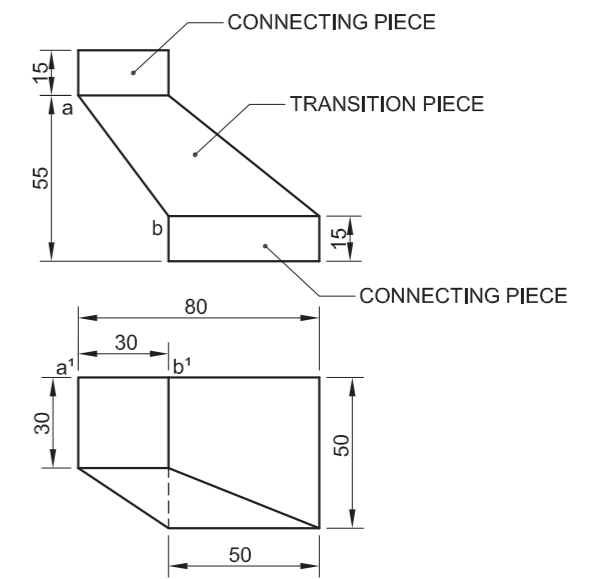
Given:

The front view and top view of a portion of a duct showing an offset square-to-square transition piece with two connecting pieces.

Instructions:

- 2.1 Draw, to scale 1 : 1, the given front view and top view of the given portion of the duct.
- 2.2 Develop the surface of the transition piece ONLY. Make edge AB the seam.

Show ALL necessary construction and fold lines. **[34]**



EDGE **AB** IS THE SEAM.

ASSESSMENT CRITERIA			
FRONT VIEW + TOP VIEW	10		
TRUE LENGTH + METHOD	10		
DEVELOPMENT	14		
TOTAL	34		
EXAMINATION NUMBER			
EXAMINATION NUMBER			3





QUESTION 2: INTERPENETRATION AND DEVELOPMENT

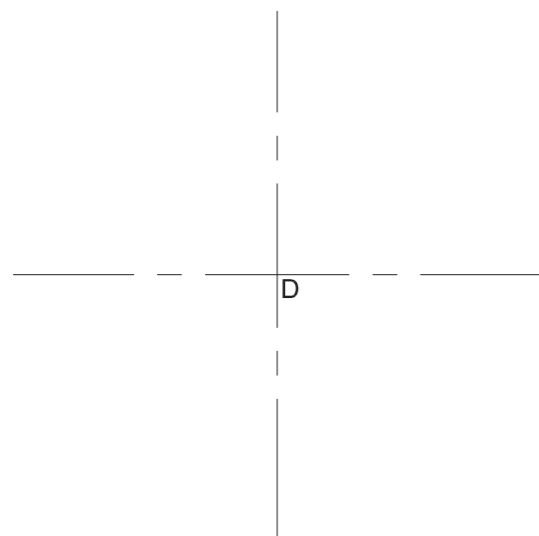
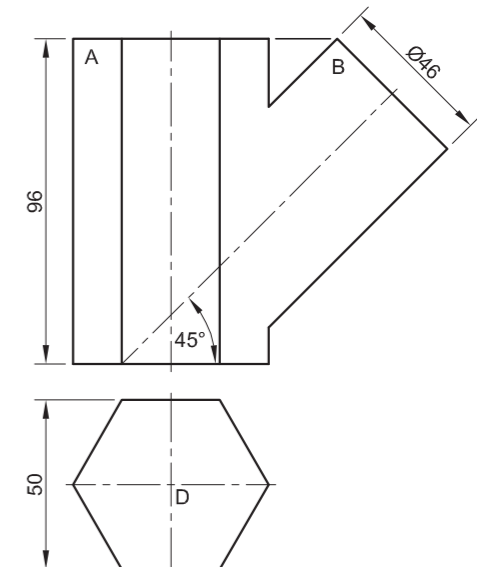
Given:

- The incomplete front view and top view of a connecting piece for a ventilation system. The connecting piece consists of a hexagonal pipe (A) and a cylindrical branch pipe (B) that lie in a common vertical plane
- Centre point D as the reference point on the drawing sheet

Instructions:

- 2.1 Draw, to scale 1 : 1, the following views of the connecting piece:
 - 2.1.1 The complete top view using point D as the reference point
 - 2.1.2 The complete front view clearly showing the curve of interpenetration
 - 2.2 Develop the surface of the cylindrical branch pipe (B).
- Show ALL necessary construction and calculations.

[40]



ASSESSMENT CRITERIA				
1. GIVEN + CENTRE LINES	8			
2. AUX. CIRCLES	4			
3. PROJECTION	4			
4. INTERPENETRATION	5½			
5. TOP VIEW OF CYLINDER	7			
6. DEVELOPMENT	11½			
TOTAL	40			
EXAMINATION NUMBER				
EXAMINATION NUMBER				
				3





QUESTION 2: DEVELOPMENT

A company that installs extraction systems has designed an extraction unit for the kitchen of a restaurant. The unit consists of a transition piece (A), a cylindrical pipe (B) and a conical funnel (C).

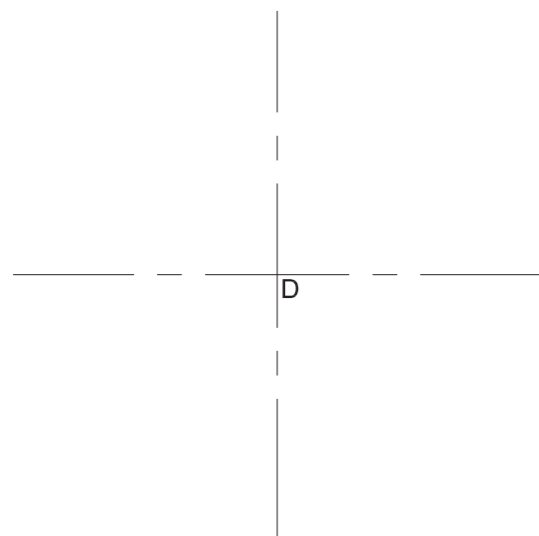
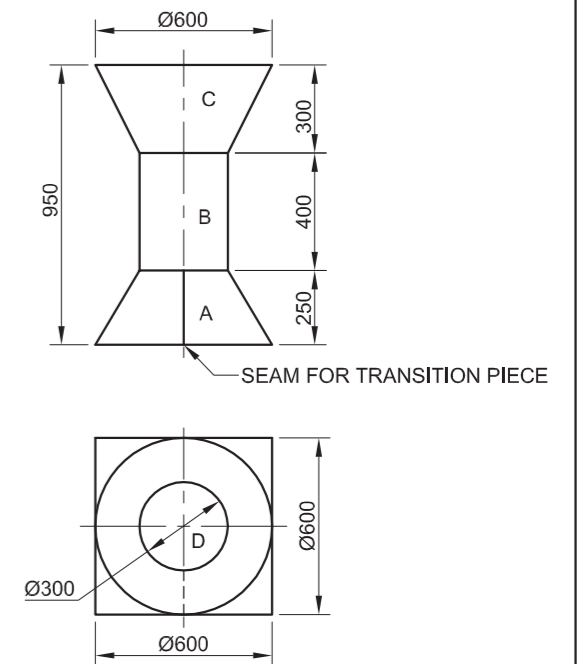
Given:

- The front view and top view of the extraction unit
- Centre point (D) as the reference point on the drawing sheet

Instructions:

- 2.1 Draw, to scale 1 : 10, the given views of the extraction unit using point (D) as the reference point.
- 2.2 Develop the surface of the transition piece (A).
- 2.3 Develop the surface of the cylindrical pipe (B).
- 2.4 Develop the surface of the conical funnel (C).

- Show ALL necessary construction and calculations. **[37]**



ASSESSMENT CRITERIA			
1. GIVEN	8		
2. TRUE LENGHTS	4		
3. DEVELOPMENT A	14		
4. DEVELOPMENT B	4		
5. DEVELOPMENT C	7		
TOTAL	37		
EXAMINATION NUMBER			
EXAMINATION NUMBER			
EXAMINATION NUMBER			3





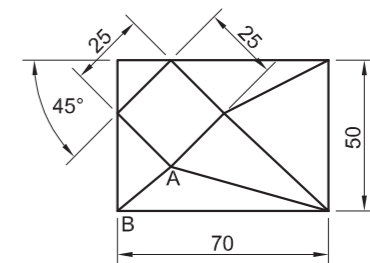
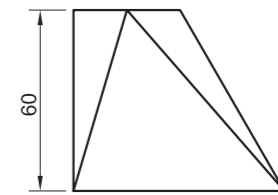
QUESTION 2: DEVELOPMENT

Given:

The front view and top view of a rectangular-to-square transition piece.

Instructions:

- 2.1 Draw, to scale 1:1 and in first-angle orthographic projection, the following views of the transition piece:
 - 2.1.1 The top view
 - 2.1.2 The front view
 - 2.1.3 The left view
- 2.2 Develop the surface of the transition piece. Make the edge marked AB the seam.
- 2.3 Show ALL necessary construction and fold lines. **[34]**



EDGE **AB** IS THE SEAM.

ASSESSMENT CRITERIA			
TOP + FRONT + LEFT VIEW	9		
TRUE LENGTHS	8		
DEVELOPMENT	17		
TOTAL	34		
EXAMINATION NUMBER			
EXAMINATION NUMBER			3



QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:

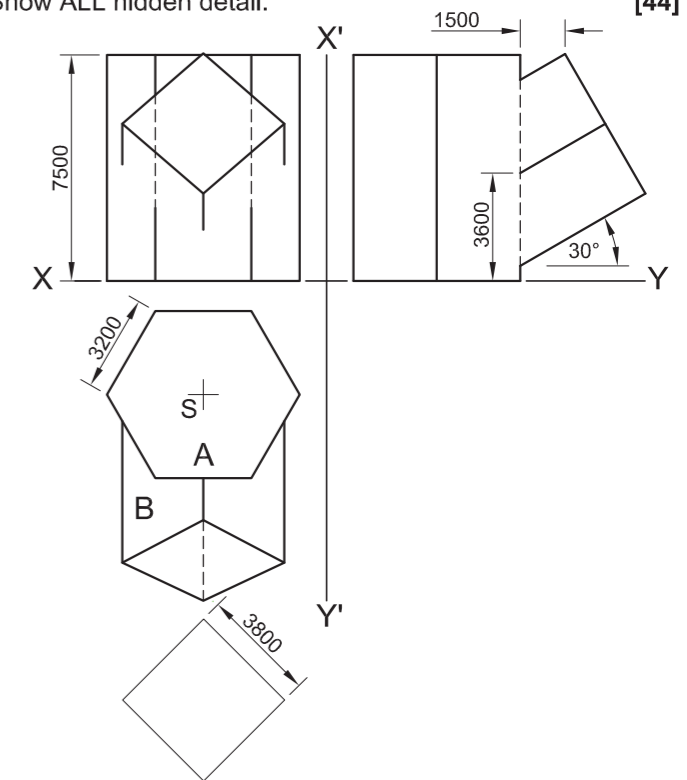
The incomplete front view, top view and the incomplete left view of an anchor used to secure an arch over a stadium. The anchor is a concrete casting in the form of a hexagonal prismatic footing (A) and a square branch piece (B), that has been shaped to fit around the footing. The axes of both pieces lie in a common vertical plane. The branch piece will be cladded with stainless steel.

Instructions:

- 2.1 Draw, to scale 1:100 and in first-angle orthographic projection, the following views of the complete anchor clearly showing the curve of interpenetration that will be formed between the two pieces:
 - 2.1.1 The top view using point S as a reference
 - 2.1.2 The complete front view
 - 2.1.3 The complete left view
- 2.2 Develop the surface of the stainless steel cladding that will cover the branch piece B. Label the development.

- Show ALL necessary constructions.
- Show ALL hidden detail.

[44]



S+

ASSESSMENT CRITERIA			
TOP VIEW & CONSTRUCTION	6½		
FRONT VIEW	17		
LEFT VIEW	10		
DEVELOPMENT	10½		
TOTAL	44		
EXAMINATION NUMBER			
EXAMINATION NUMBER			
3			



QUESTION 2: INTERPENETRATION AND DEVELOPMENT

A company that installs ventilation systems in buildings, designed a pipe system to fit into an office block. The system consists of a main cylindrical pipe and smaller branch pipes.

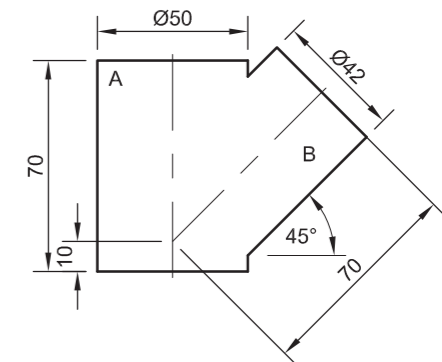
Given:

The incomplete front view of a connecting piece for the ventilation system consisting of a cylindrical pipe (A) and a cylindrical branch pipe (B). The axes of both pipes lie in a common vertical plane.

Instructions:

- 2.1 Draw in first-angle orthographic projection the following views of the connecting piece clearly showing the curve of interpenetration:
 - 2.1.1 The front view
 - 2.1.2 The top view
- 2.2 Develop the surface of the branch pipe marked B.

- Show ALL necessary construction and calculations. [37]



ASSESSMENT CRITERIA

FRONT VIEW	10
TOP VIEW	6
CENTRE LINES (5x1/2)	2 1/2
CONSTRUCTION	6
FORMULA	2
DEVELOPMENT	10 1/2
TOTAL	37

EXAMINATION NUMBER	
EXAMINATION NUMBER	3



QUESTION 2: DEVELOPMENT

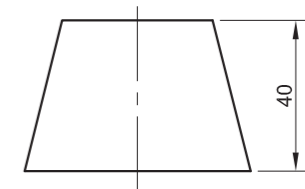
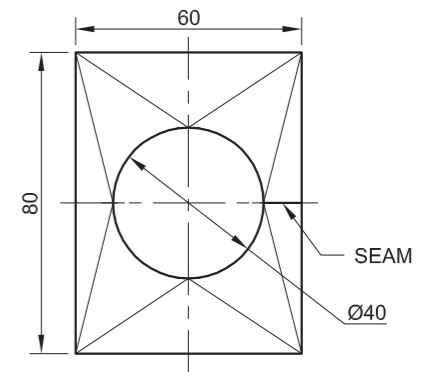
Given:

The front view and top view of a rectangle-to-round transition piece.

Instructions:

- Draw the given views of the transition piece.
- Develop the surface of the transition piece.
- Show ALL necessary construction and fold lines.

[35]



ASSESSMENT CRITERIA	
FRONT VIEW	2
TOP VIEW	3
CENTRE LINES	2
TOP VIEW DIVISIONS	1
TRUE LENGTH x4	6
DEVELOPMENT	21
TOTAL	35

EXAMINATION NUMBER	
EXAMINATION NUMBER	3



QUESTION 2: DEVELOPMENT

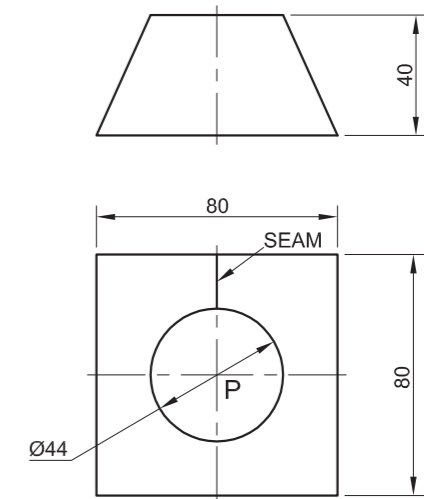
Given:

The front view and top view of a square to a round transition piece.

Instructions:

- Draw the given views of the transition piece.
- Develop the surface of the transition piece.
- Show ALL necessary construction and fold lines.

[35]



ASSESSMENT CRITERIA

FRONT VIEW	= 2
TOP VIEW	= 3
CIRCLE DIVISION	= 2
TRUE LENGTH x2	= 6
DEVELOPMENT	= 21
CENTRE LINES	= 1
TOTAL	= 35

EXAMINATION NUMBER	
EXAMINATION NUMBER	3