KRAM
STAPLE

education

Department of
Education
FREE STATE PROVINCE

INGENIEURSGRAFIKA EN ONTWERP
ENGINEERING GRAPHICS AND DESIGN

GRAAD 10/ GRADE 10

JUNIE 2017 / JUNE 2017

TYD: 3 URE / TIME: 3 HOURS

TOTAAL: 100/ TOTAL: 100

INSTRUKSIES EN INLIGTING

1. Beantwoord alle vrae.
2. ALLE tekeninge is in derdehoekse ortografiese projeksie, tensy anders aangedui.
3. ALLE tekeninge moet volgens skaal 1:1 geteken word, tensy anders aangedui.
4. AL die vrae moet soos voorgeskryf op die VRAESTEL beantwoord word.
5. AL die bladsye moet weer in nommervolgorde vasgekram word, ongeag of die vraag beantwoord is of nie.
6. Tydsbeplanning is noodsaaklik om al die vrae te voltooi.
7. Drukskryf jou naam en van asook die graad in die spasie wat voorsien is op elke bladsy.
8. ALLE antwoorde moet akkuraat en netjies geteken word.
9. Alle nodige konstruksie- en projeksielyne moet getoon word.
10. Beplan elke tekening noukeurig vanaf die beginposisie wat aangedui is op die diagramvelle.
11. Enige besonderhede of afmetings wat nie gegee is nie, moet in goeie verhouding beraam word.

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. ALL drawings are in third-angle orthographic projection, unless stated otherwise.
3. ALL drawings must be drawn to scale 1:1, unless stated otherwise.
4. ALL questions must be answered on the QUESTION PAPER as instructed.
5. ALL the pages must be restapled in numeric sequence, irrespective of whether the question was attempted or not.
6. Time management is essential in order to complete all the questions.
7. Print your name and surname as well as the grade in the space provided on each page.
8. ALL answers must be drawn accurately and neatly.
9. ALL necessary construction and projection lines must be shown.
10. Plan each drawing carefully from the given position, which is indicated on the diagram sheets.
11. Any details or dimensions not given must be assumed in good proportion.

SLEGS VIR AMPTELIKE GEBRUIK FOR OFFICE USE ONLY							
PUNTE / MARKS					MODEREER MODERATE		
1							
2							
3							
4							
TOTAAL TOTAL							
	2	0	0				

FINALE PUNT FINAL MARK	NAGESIEN CHECKED
____ 100	

NAAM & VAN NAME & SURNAME		GRAAD GRADE	

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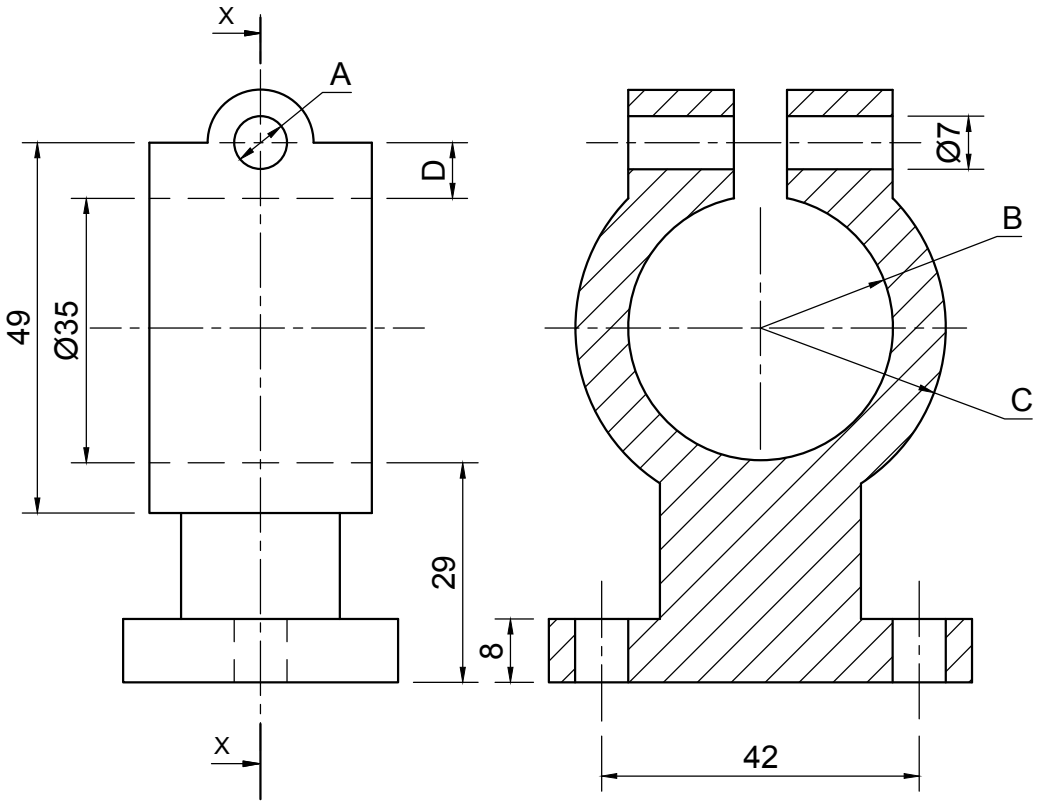
VRAAG 1: ANALITIES (MEGANIES)

Diagramvel 1 toon twee aansigte van 'n KLAMP in D.O.P.
Instruksies:
Voltooi die tabel op antwoordvel 1 deur die vrae te beantwoord wat almal verwys na die tekening.
DRUKSKRYF DIE ANTWOORDE IN POTLOOD EN IN HOOFLETTERS. (35)

QUESTION 1: ANALYTICAL (MECHANICAL)

Diagram sheet 1 shows two views of a CLAMP in T.A.O.P.
Instructions:
Complete the table on answer sheet 1 by answering the questions that refers to the drawing.
PRINT THE ANSWERS IN PENCIL AND IN CAPITAL LETTERS. (35)

AANSIG 1
VIEW 1



DEURSNEE VOORAANSIG
SECTIONAL FRONT VIEW

TITEL / TITLE KLAMP CLAMP	BESTEL NO ORDER NO THS 852	CHECKED BY HERSIEN CP MEYER	4	DATE DATUM 09-06-2017	DRAWN BY GETEKEN S. NIEUWENHUIS	DATE DATUM 05-06-2017	APPROVED BY GOEDGEKEUR JD VD BERG	DRAWING FILE NR. TEK. LÊER NO. 2017-010	**NOTAS / NOTES** ALLE AFMETINGS IS IN MILLIMETERS. ALLE RADIUSSE WAT NIE GEGEE IS NIE IS R10. ALL SIZES IS IN MILLIMETERS. ALL RADII NOT GIVEN IS R10.
					SKAAL / SCALE 1 : 1	NO. REQUIRED AANTAL BENODIG 25			

INGENIEURSGRAFIKA & ONTWERP ENGINEERING GRAPHICS & DESIGN	JUNIE 2017 EKSAMEN JUNE 2017 EXAM	DIAGRAMVEL 1 DIAGRAM SHEET 1

TITEL TITLE		SKAAL SCALE		DATUM DATE		NAAM & VAN NAME & SURNAME		GRAAD GRADE	

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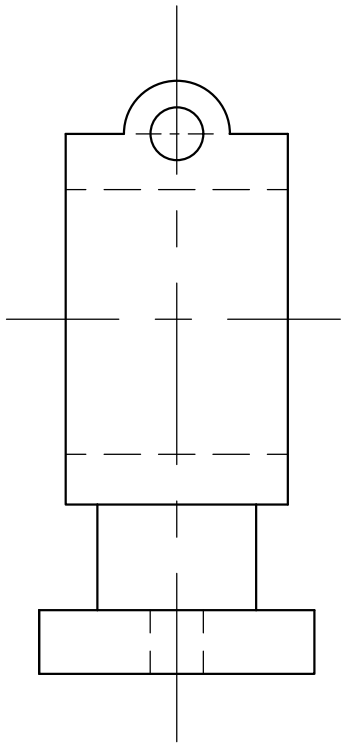
ANTWOORD 15 / ANSWER 15

ANTWOORD 16 / ANSWER 16



	VRAE / QUESTIONS		ANTWOORDE / ANSWERS		E	M
1	Wat is die tekening lêernommer? What is the drawing file number?			1		
2	Wat is die bestelnommer? What is the order number?			1		
3	Wat is die skaal van die tekening? What is the scale of the drawing?			1		
4	Wie het die tekening geteken? Who drew the drawing?			1		
5	Hoeveel KLAMPE moet vervaardig word? How many CLAMPS must be manufactured?			1		
6	Watter stelsel van ortografiese projeksie is gebruik? What system of orthographic projection has been used?			1		
7	Op watter datum is die tekening hersien? On what date was the drawing checked?			1		
8	Hoeveel keer is die tekening hersien? How many revisions have there been?			1		
9	Wie het die tekening goedgekeur? Who approved the drawing?			1		
10	Wat beteken die X - X op aansig 1? What does the X - X on view 1 mean?			1		
11	Watter soort aansig is aansig 1? What kind of view is view 1?			1		
12	Wat is die grade waarmee die arsering geteken moet word? What is the angle that the hatching must be drawn?			1		
13	Is die vooraansig korrek gearseer? Is the front view hatched correctly?			1		
14	Bepaal die afmetings by: Determine the dimensions at:	A		2	7		
		B		2			
		C		2			
		D		1			
15	In die voorsiende blok, teken, in netjiese vryhand, die simbool vir die projeksiesisteem wat gebruik word. In the provided box, draw, in neat freehand, the symbol for the projection system.			9		
16	Op diagramvel 1 is die snyvlak X-X verkeerdelik geteken. Voeg die korrekte snyvlak X-X op die vooraansig aan op antwoordvel 1 in die spasie wat voorsien is. On diagram sheet 1 the cutting plane X-X is wrongly drawn. Insert the correct cutting plane X -X on the front view on answer sheet 1 in the space that is given.			6		
			TOTAAL / TOTAL:	35		

ANTWOORDVEL 1 INGENIEURSGRAFIKA & ONTWERP
ANSWER SHEET 1 ENGINEERING GRAPHICS & DESIGN

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KONSTRUKSIES / CONSTRUCTIONS

VRAAG 2

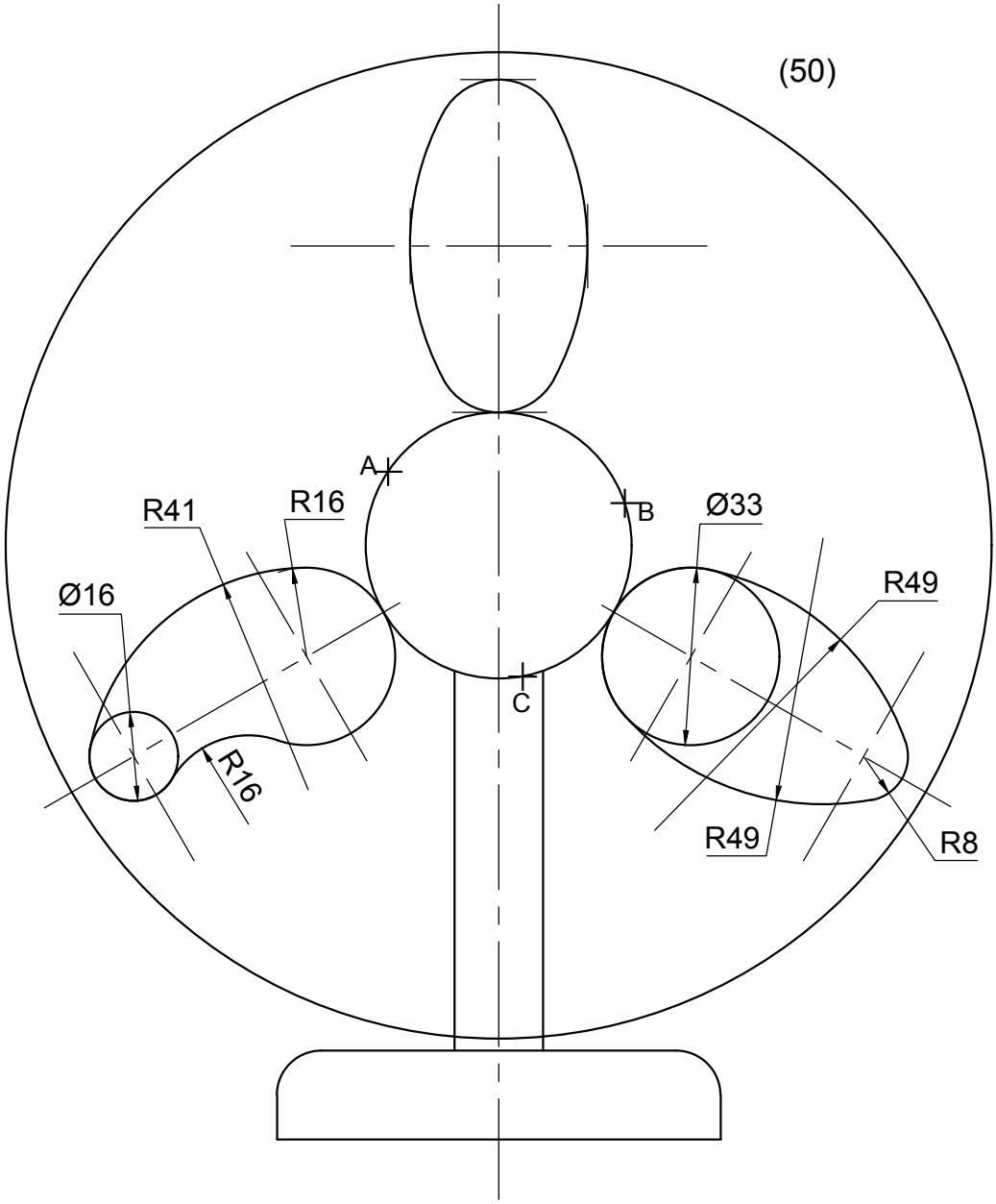
Kopieer die gegewe figuur volgens skaal 1 : 1.
ALLE KONSTRUKSIE MOET GETOON WORD
VIR MAKSIMUM PUNTE.

(50)

QUESTION 2

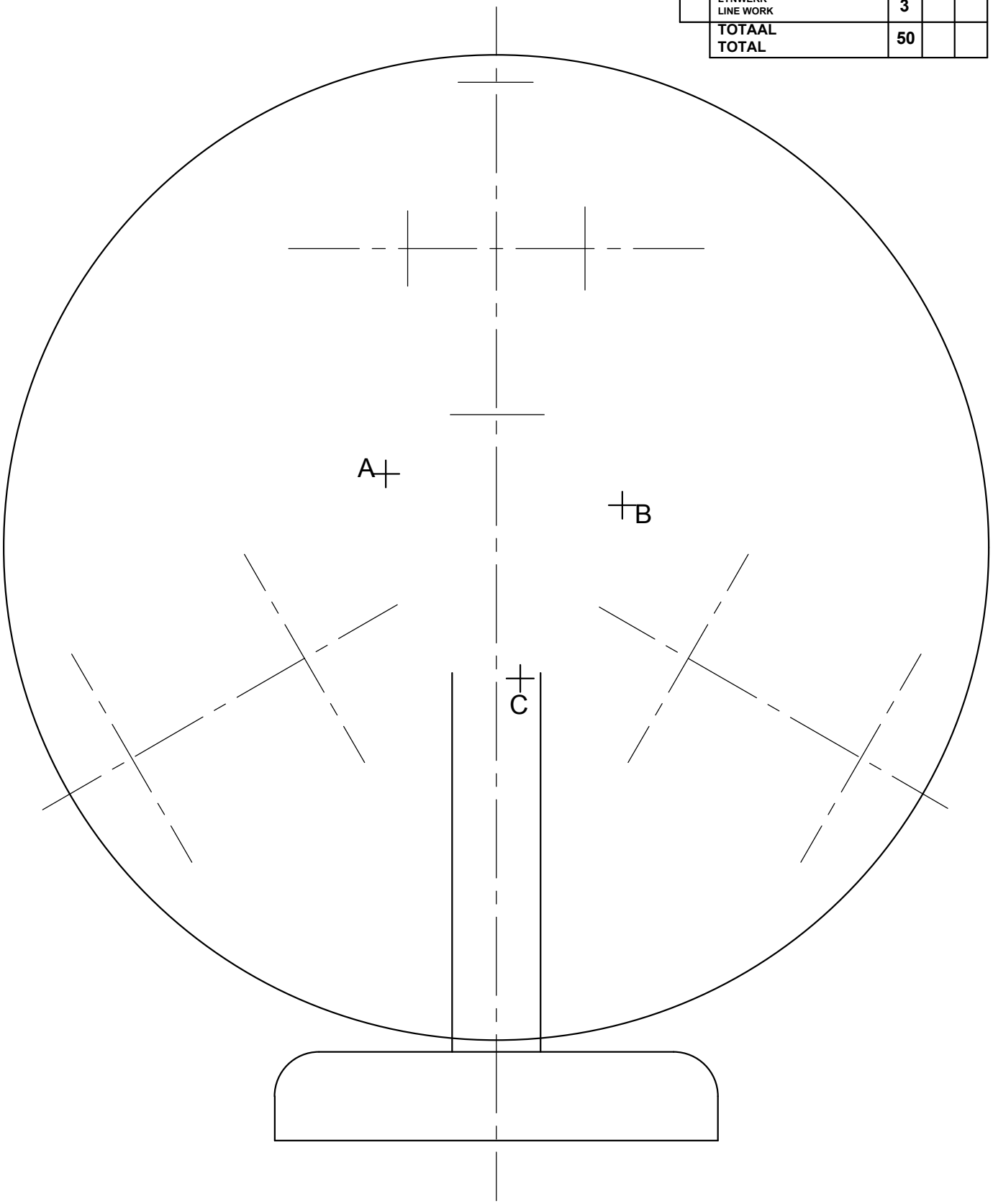
Copy the given figure to scale 1 : 1.
ALL CONSTRUCTIONS MUST BE SHOWN
FOR MAXIMUM MARKS.

(50)



NAAM & VAN NAME & SURNAME		GRAAD GRADE	

KONSTRUKSIE CONSTRUCTION		KOR COR	E	M
1	SIRKEL ABC CIRCLE ABC	10		
2	SIRKELS CIRCLES	2		
3	BOË ARCHES	14		
4	ELLIPS ELLIPSE	21		
	LYNWERK LINE WORK	3		
	TOTAAL TOTAL	50		



NAAM & VAN
NAME & SURNAME

GRAAD
GRADE

ANTWOORDVEL 2
ANSWER SHEET 2

VRAAG 2
QUESTION 2

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VRAAG 3: ISOMETRIES

Beantwoord die vraag op antwoordvel 3.

'n Voor-, linker- en bo-aansig van 'n GIETSTUK word in D.O.P. getoon.

1 Teken 'n isometriese aansig van die GIETSTUK volgens skaal 1 : 1.
2 Die posisie van punt A word getoon.
3 TEKEN SLEGS DIE VERBORGE DETAIL VIR DIE SESKANTIGE PRISMA.

(50)

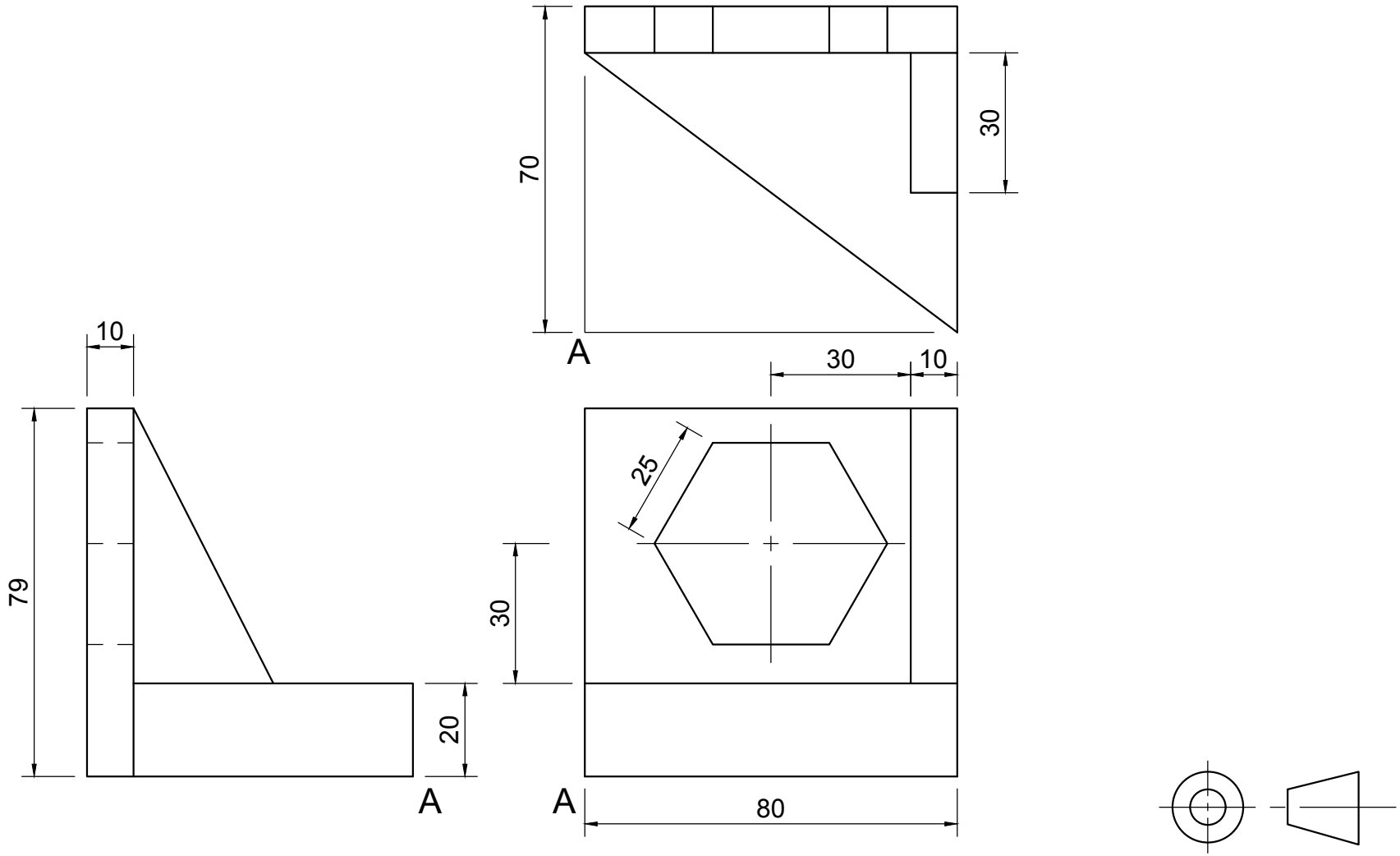
QUESTION 3: ISOMETRIC

Answer this question on answer sheet 3.

A front-, left-, and a top view of a CASTING is shown in T.A.O.P.

1 Draw an isometric view of the CASTING according to scale 1 : 1.
2 The position of point A is given.
3 DRAW ONLY THE HIDDEN DETAIL FOR THE HEXAGONAL PRISM.

(50)



DIAGRAMVEL 3 DIAGRAM SHEET 3	INGENIEURSGRAFIKA & ONTWERP ENGINEERING GRAPHICS & DESIGN	JUNIE 2017 EKSAMEN JUNE 2017 EXAM	NAAM & VAN NAME & SURNAME		GRAAD GRADE	

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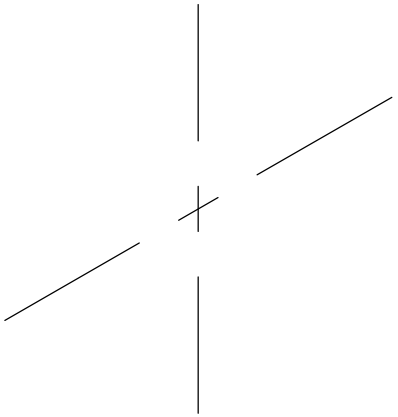
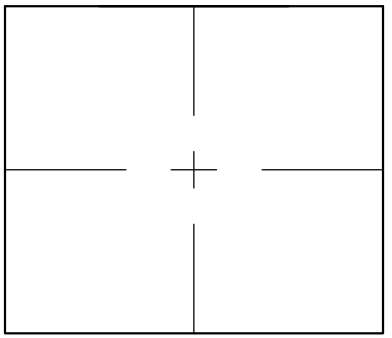
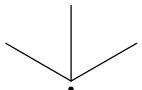
	ISOMETRIES ISOMETRIC	KOR COR	E	M
1	HULPAANSIG AUXILIARY VIEW	6		
2	GIETSTUK CASTING	19		
3	SESKANT HEXAGON	20		
	LYNWERK LINE WORK	5		
	TOTAAL TOTAL	**50**		



HULPAANSIG
AUXILIARY VIEW





ANTWOORDVEL 3 ANSWER SHEET 3	INGENIEURSGRAFIKA & ONTWERP ENGINEERING GRAPHICS & DESIGN	JUNIE 2017 EKSAMEN JUNE 2017 EXAM	NAAM & VAN NAME & SURNAME		GRAAD GRADE	

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VRAAG 4: MEGANIESE-SNIT

Beantwoord die vraag op antwoordvel 4.

'n Voor-, regter-, bo-, isometriese- en 'n isometriese snitaansig van 'n GIETSTUK word getoon in D.O.P op diagramvel 4.

Teken die volgende aansigte van die GIETSTUK volgens skaal 1:1 in D.O.P. :

1 'n Deursnee vooraansig volgens snyvlak A - A

2 'n Deursnee bo-aansig volgens snyvlak B - B

3 'n Deursnee regter aansig volgens snyvlak C - C

4 Teken die projeksie simbool in die gegewe spasie

(70)

QUESTION 4: MECHANICAL SECTION

Answer this question on answer sheet 4.

A front-, right-, top-, isometrical- and an isometrical sectional view of a CASTING are shown in T.A.O.P. on diagram sheet 4.

Draw the following views of the CASTING to scale 1:1 in T.A.O.P. :

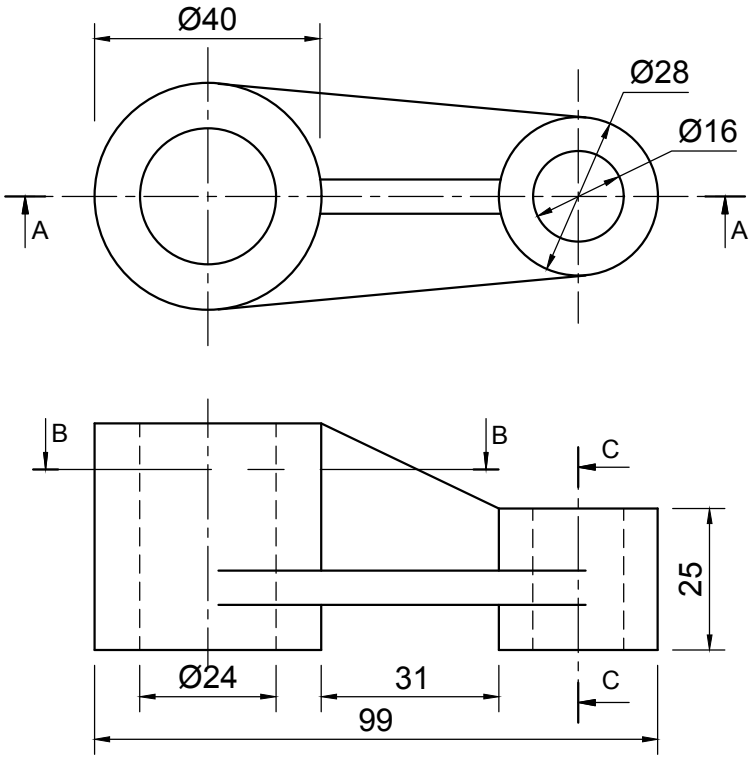
1 A sectional front view on cutting plane A - A

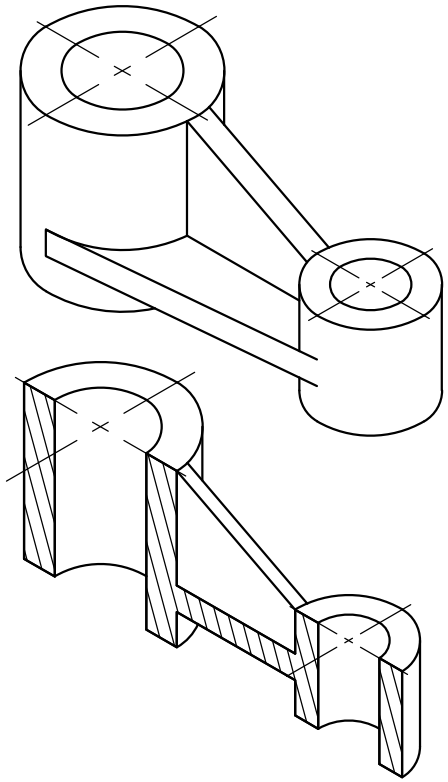
2 A sectional top view on cutting plane B - B

3 A sectional right view on cutting plane C - C

4 Draw the projection symbol in the space provided

(70)





DIAGRAMVEL 4 DIAGRAM SHEET 4	INGENIEURSGRAFIKA & ONTWERP ENGINEERING GRAPHICS & DESIGN	JUNIE 2017 EKSAMEN JUNE 2017 EXAM	NAAM & VAN NAME & SURNAME		GRAAD GRADE	

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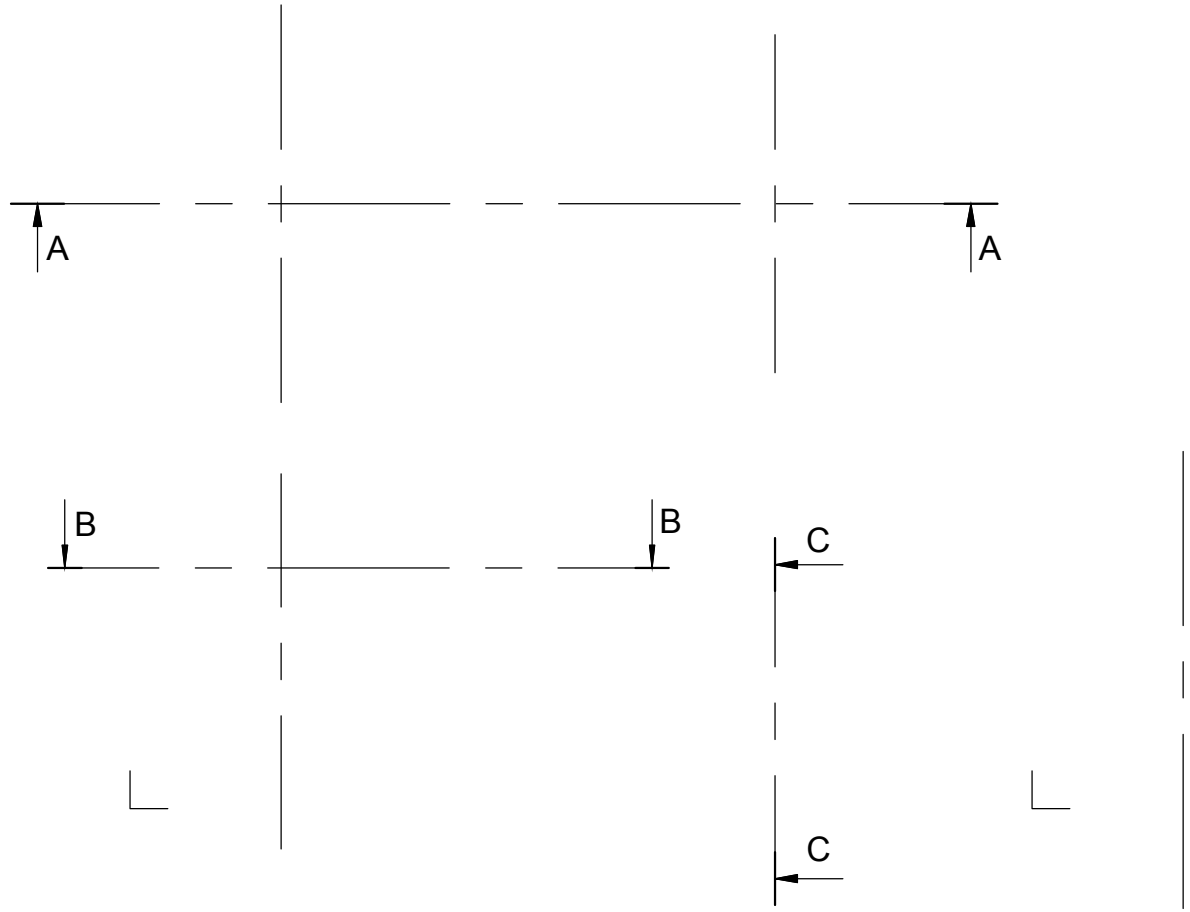
SNIT SECTION		KOR COR	E	M
1	DEURSNEE VOORAANSIG SECTIONAL FRONT VIEW	24		
2	DEURSNEE BO-AANSIG SECTIONAL TOP VIEW	19		
3	DEURSNEE REGTER AANSIG SECTIONAL RIGHT VIEW	19		
4	PROJEKSIESIMBOOL PROJECTION SYMBOL	3		
	TOTAAL TOTAL	65		



PROJEKSIESIMBOOL
PROJECTION SYMBOL

ANTWOORDVEL 4 ANSWER SHEET 4	INGENIEURSGRAFIKA & ONTWERP ENGINEERING GRAPHICS & DESIGN	JUNIE 2017 EKSAMEN JUNE 2017 EXAM	NAAM & VAN NAME & SURNAME		GRAAD GRADE