



education

Department of Education
FREE STATE PROVINCE

ENGINEERING GRAPHICS AND DESIGN

GRADE 12

TEST

MAARCH 2018

TIME: 1 HOUR

TOTAL: 90

This question paper consists of 3 pages (including front page)

INSTRUCTIONS AND INFORMATION

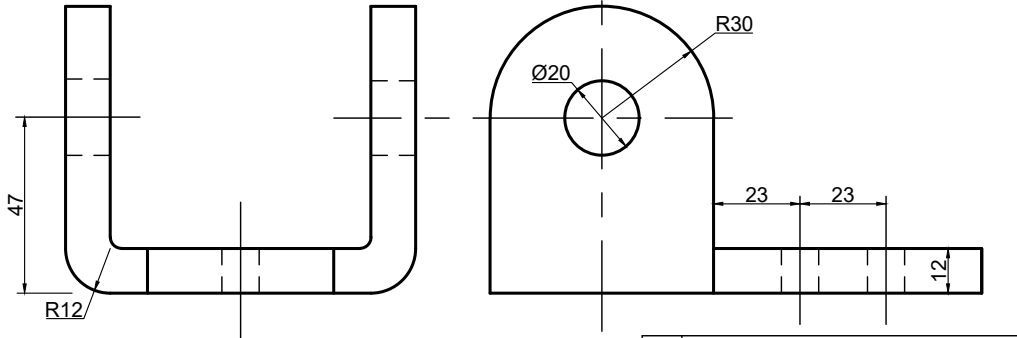
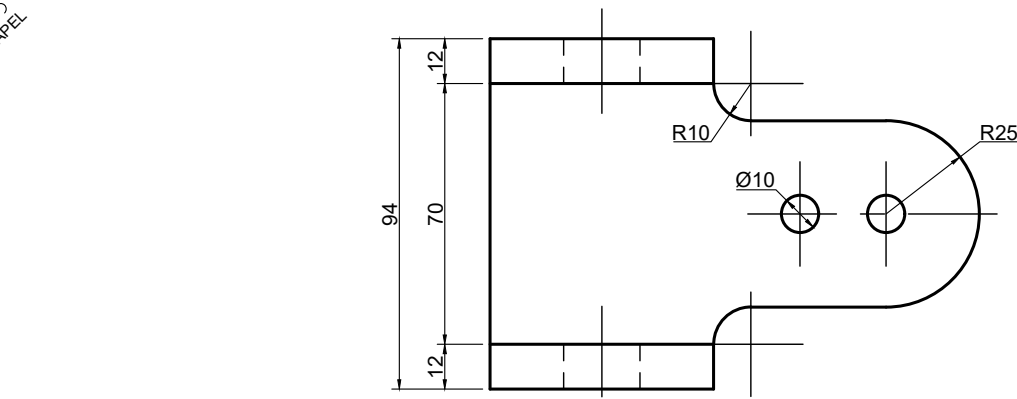
1. Answer all the questions.
2. ALL drawings are in third-angle orthographic projection, unless stated otherwise.
3. ALL drawings must be drawn to scale 1:1, unless stated otherwise.
4. ALL questions must be answered on the DIAGRAM SHEET as instructed.
5. ALL the pages must be stapled in numeric sequence, 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.
9. Plan the layout of each drawing accurately whether or not the starting position on the diagram sheet is shown.
10. Any details or dimensions not given must be assumed in good proportion.

FOR OFFICIAL USE ONLY						
QUESTION	MARKS OBTAINED		½	MODERATED		½
1						
TOTAL						
	9	0		9	0	

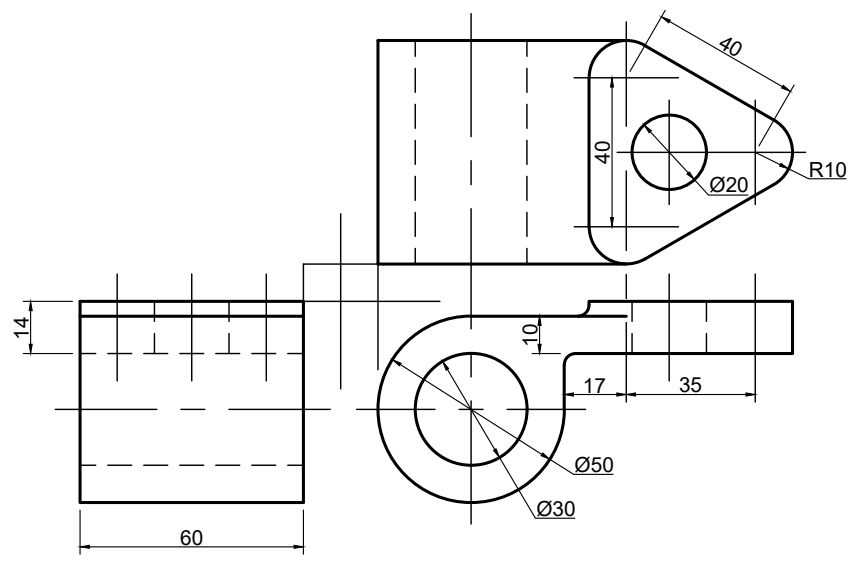
FINAL CONVERTED MARK	CHECKED BY
60	

NAME & SURNAME		GRADE		1
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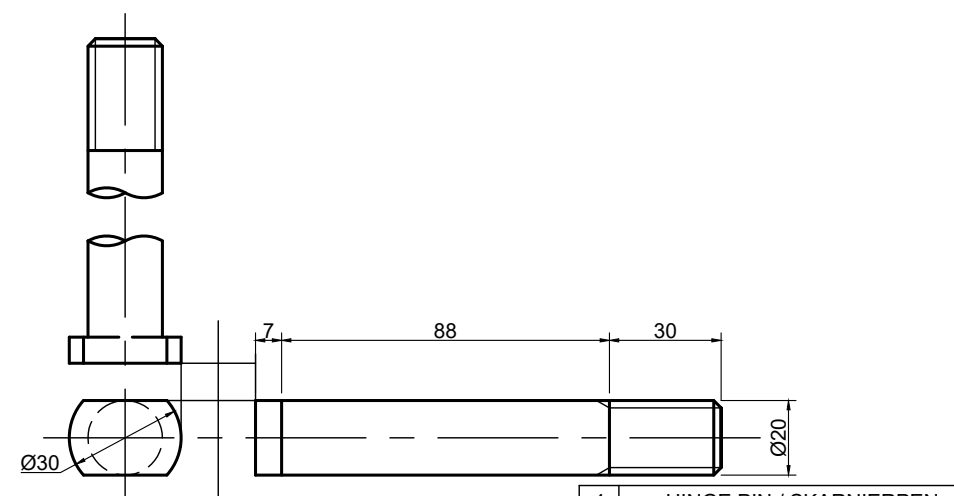
STAPEL



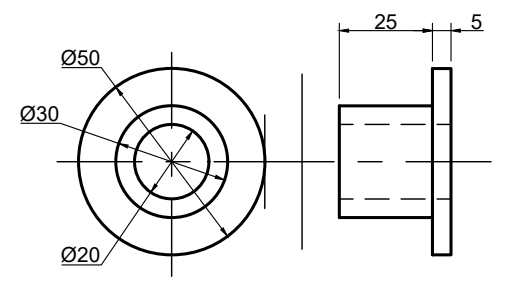
1 HINGE CLAMP / SKARNIERKLAMP



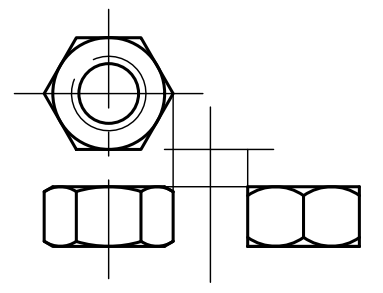
2 HINGE BLADE / SKARNIERBLAD



4 HINGE PIN / SKARNIERPEN



3 BUSH / BUS



5 M 20 NUT / M 20 BOUT

QUESTION 1: MECHANICAL ASSEMBLY

GIVEN:

Diagram sheet 2 shows...

- an exploded isometric drawing of the parts of a hinge, showing the position of each part relative to all the others.
- the orthographic view of each of the parts of the hinge.

Diagram sheet 3 shows...

- punt Q as the starting position of the front view.

INSTRUCTIONS:

Answer this question on diagram sheet 3 (page 4).

Draw according to SANS 0111, to a scale of 1:1 and in third angle orthographic projection, the following views of the assembled parts of the hinge.

- A front view, as seen from the direction of the arrow shown on the exploded isometric drawing.
- A sectional right view on AA. Show two sides of the M 20 nut in this view.
- A top view. Show three sides of the M 20 nut in this view.

NOTE:

No hidden detail is required.

Show the following on the drawing:

- the projection system symbol used to draw this drawing.
- the cutting plane AA.
- all center lines drawn in position for this drawing.
- between 6 mm guidelines, the title and scale of this drawing in the given title block.

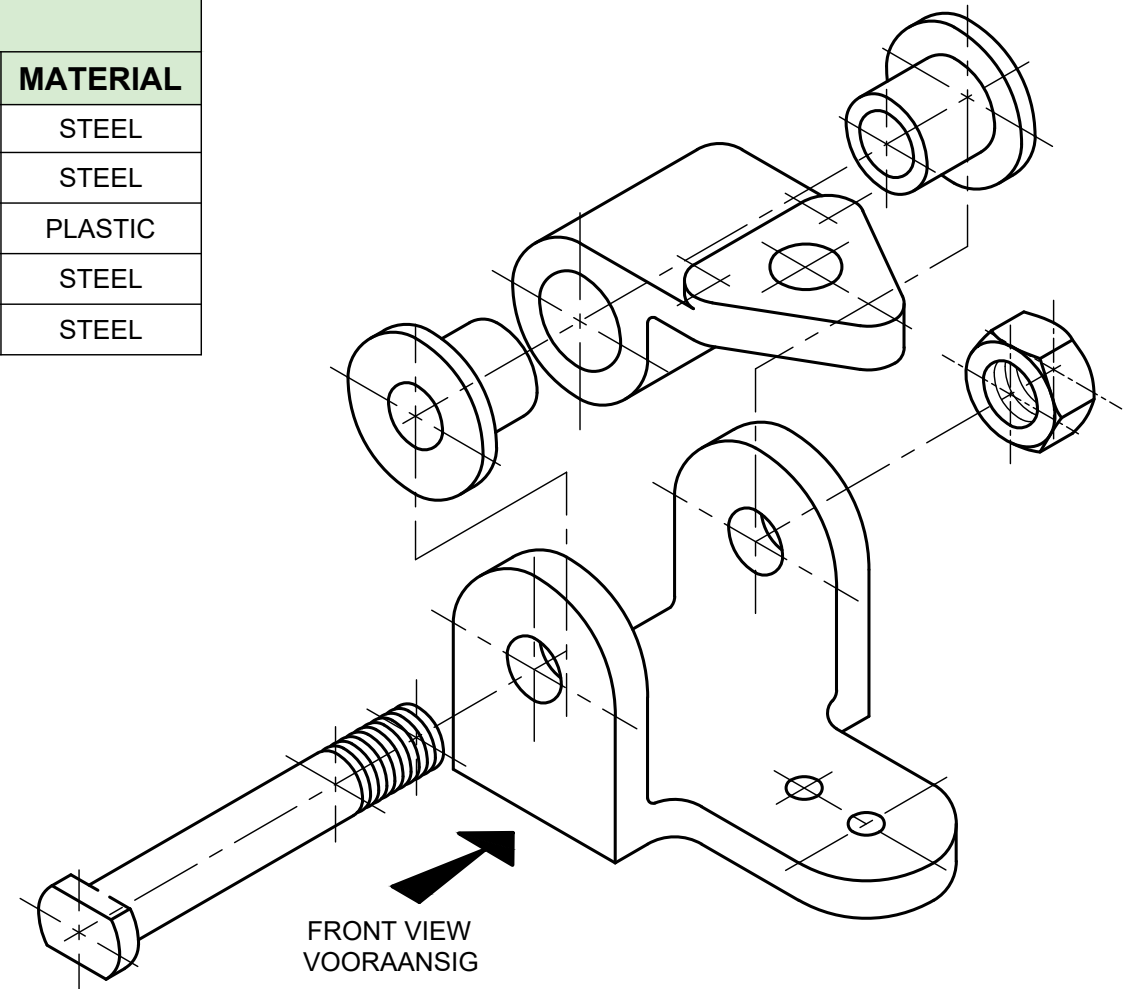
HINGE ASSEMBLY

SCALE 1:1

[90]

LIST OF PARTS

No	PART	TOTAL	MATERIAL
1	HINGE CLAMP	1	STEEL
2	HINGE BLADE	1	STEEL
3	BUSH	2	PLASTIC
4	HINGE PIN	1	STEEL
5	M 20 NUT	1	STEEL





PROJECTION SYSTEM SYMBOL

TITLE & SCALE

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ASSESSMENT CRITERIA				
FRONT VIEW				
1	Hinge clamp ($\frac{7}{2}$)	3,5		
2	Hinge blade ($\frac{5}{2}$)	2,5		
4	Hinge Pin ($\frac{4}{2}$)	2		
SUBTOTAL 1		8		
SECTIONAL RIGHT VIEW				
1	Hinge clamp ($\frac{17}{2}$)	8,5		
2	Hinge blade ($\frac{6}{2}$)	3		
3	Bush ($\frac{24}{2}$)	12		
4	Hinge Pin ($\frac{17}{2}$)	8,5		
5	M 20 Nut ($\frac{10}{2}$)	5		
SUBTOTAL 2		37		
TOP VIEW				
1	Hinge clamp ($\frac{10}{2}$)	5		
2	Hinge blade ($\frac{11}{2}$)	5,5		
3	Bush ($\frac{4}{2}$)	2		
4	Hinge Pin ($\frac{13}{2}$)	6,5		
5	M 20 Nut ($\frac{18}{2}$)	9		
SUBTOTAL 3		28		
GENERAL				
1	Title & scale ($\frac{2}{2}$)	1		
	Symbol ($\frac{2}{2}$)	1		
	Center lines ($\frac{18}{2}$)	9		
	Cutting plane AA ($\frac{6}{2}$)	3		
	Auxiliary view (nut) (3)	3		
SUBTOTAL 4		17		
GRAND TOTAL		90		

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