



# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## NASIONALE SENIORSERTIFIKAAT

GRAAD 12

INGENIEURSGRAFIKA EN -ONTWERP V2

NOVEMBER 2023

NASIENRIGLYNE

PUNTE: 100

**DEPARTMENT OF BASIC  
EDUCATION**

PRIVATE BAG X695, PRETORIA 0001

2023 - 11 - 23

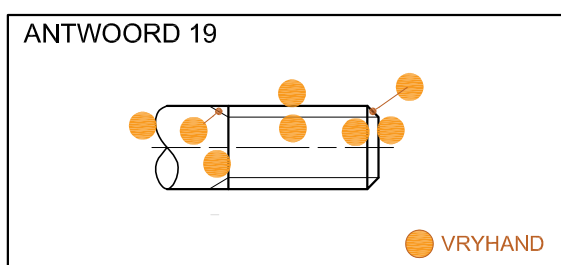
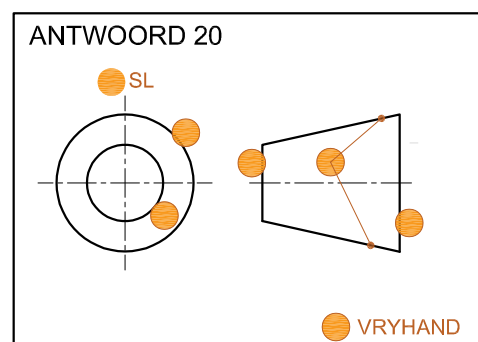
APPROVED MARKING GUIDELINE

**PUBLIC EXAMINATION**

Hierdie nasienriglyne bestaan uit 7 bladsye.

| ANTWOORDE |                                        |                 |
|-----------|----------------------------------------|-----------------|
| 1         | HAAISTRAAT                             | 1               |
| 2         | GOEDGEKEUR                             | 1               |
| 3         | SCGG213                                | 1               |
| 4         | <u>ONDERBROKE</u> AANSIG               | 1               |
| 5         | <u>INDUKSIE</u>                        | 1               |
| 6         | VERWYDERDE / WEGSTAANDE                | 1               |
| 7         | GEDEELTELIKE                           | 1               |
| 8         | B: R10    C: R4    D: 135    E: 2      | 4               |
| 9         | 36°, <b>37°</b> , 38°                  | 1               |
| 10        | 2                                      | 1               |
| 11        | ALTERNATIEWE- / UITERSTE POSISIE       | 1               |
| 12        | 4                                      | 1               |
| 13        | NIE VOLGENS SKAAL                      | 1               |
| 14        | <u>REGTERAANSIG</u>                    | 1               |
| 15        | 5                                      | 1               |
| 16        | MIN = 7,9   &   MAKS = 8,23            | 2               |
| 17        | MULTI / GEMENGDE / VEEL / MEER RIGTING | 1               |
| 18        | <u>GROFHEIDSGRAAD</u>                  | 1               |
| 19        | Sien hieronder                         | 4 $\frac{1}{2}$ |
| 20        |                                        | 3 $\frac{1}{2}$ |
| TOTAAL    |                                        | 30              |

|                                          |                                        |
|------------------------------------------|----------------------------------------|
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| <b>PUBLIC EXAMINATION</b>                |                                        |

VRAESTEL 2 VRAAG 1  
GRAAD 12  
NOVEMBER 2023  
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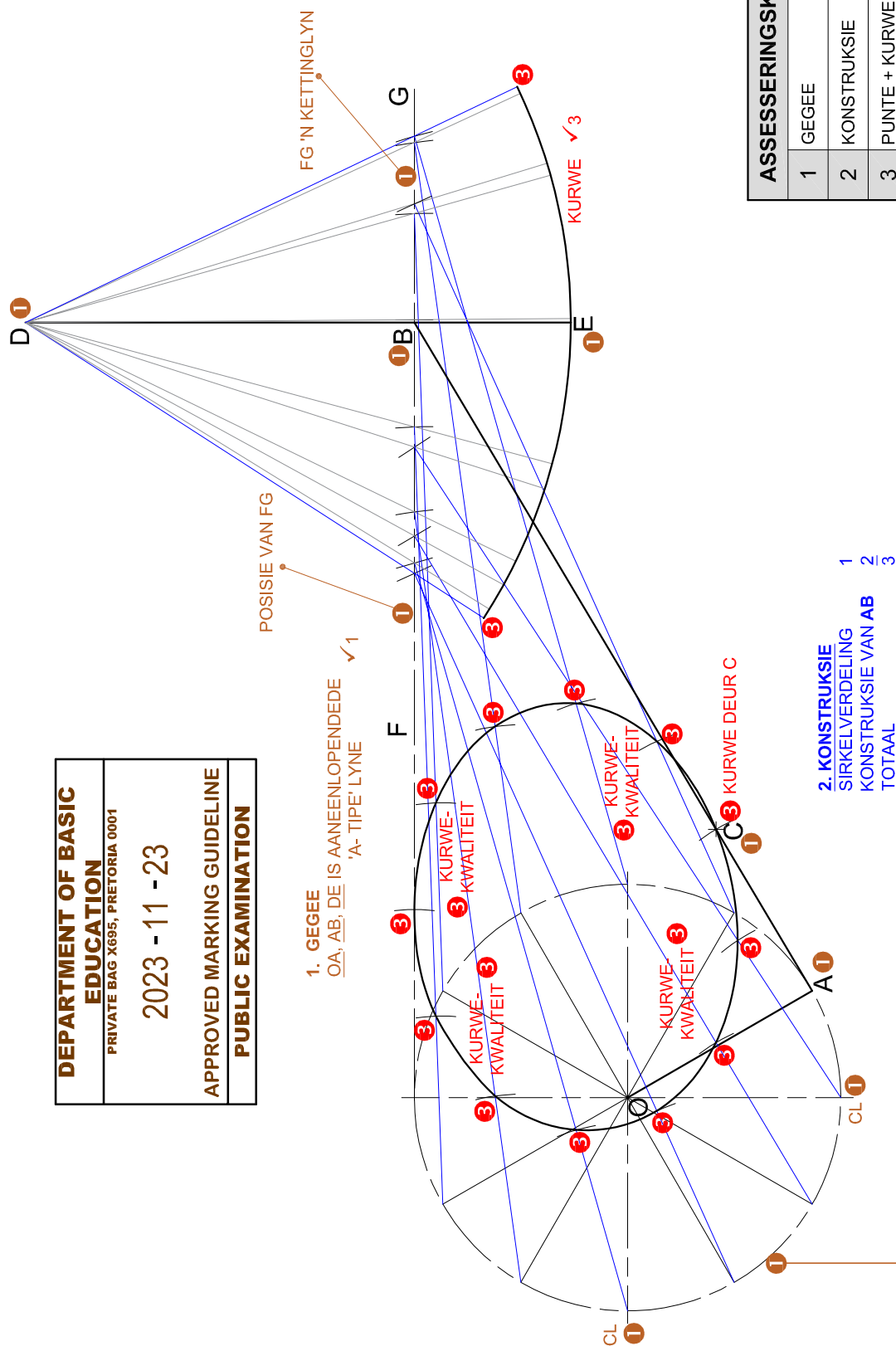
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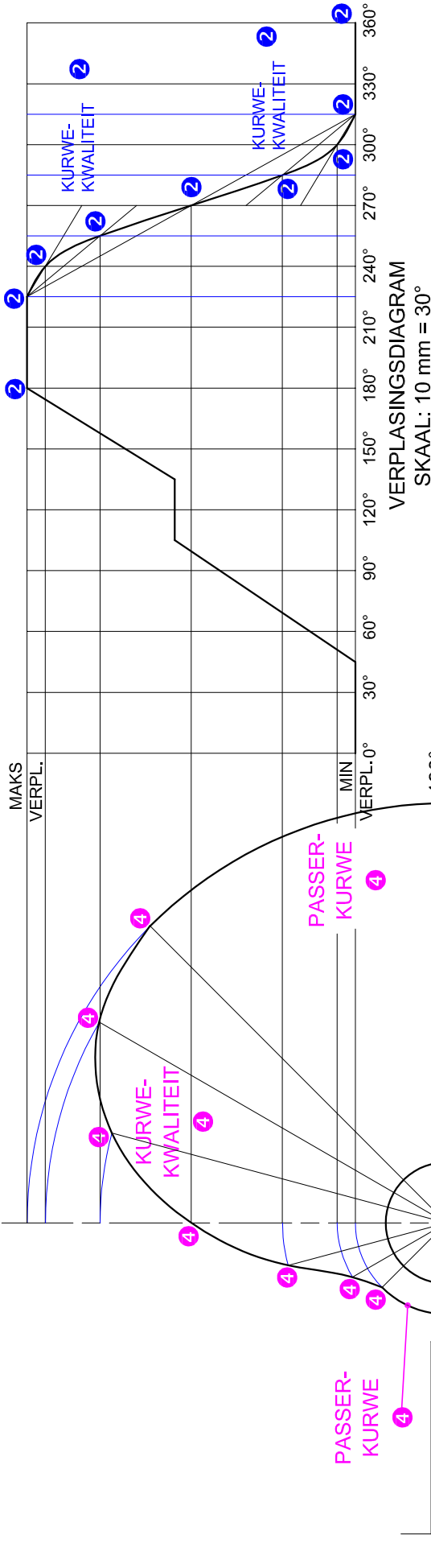


| ASSESSERINGSKRITERIA 2.1 |                  |
|--------------------------|------------------|
| 1                        | GEGEE 6          |
| 2                        | KONSTRUKSIE 3    |
| 3                        | PUNTE + KURWE 10 |
| SUBTOTAAL 2.1 19         |                  |

VRAESTEL 2 VRAAG 2.1

GRAAD 12

NOVEMBER 2023  
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VERPLASINGSDIAGRAM  
SKAAL: 10 mm = 30°

- 1 GRAFIEKKONSTRUKSIE**
- LENGTE (60 mm) 1
  - 6 VERDELINGS 1
- EENVORMIGE. VERSNEL. + VERTRAGING**
- (15° VERD.  $\frac{1}{2}$ ; 6 x VERD.  $\frac{1}{2}$ ; KONSTR  $\frac{1}{2}$ ) 2
  - 2 x BYSKRIFTE 1

- 3 NOKKONSTRUKSIE**
- SIRKELVERDELING 1
  - PROJEKTEER VANAF GRAFIEK 1
  - BOOGPROJEKSIES 1
- TOTAAL 3**

| ASSESSERINGSKRITERIA 2.2 |                      |                 |  |  |
|--------------------------|----------------------|-----------------|--|--|
| 1                        | GRAFIEKKONSTRUKSIE   | 5               |  |  |
| 2                        | UITTEKEN VAN GRAFIEK | 5 $\frac{1}{2}$ |  |  |
| 3                        | NOKKONSTRUKSIE       | 3               |  |  |
| 4                        | NOK + KURWEKWALITEIT | 5 $\frac{1}{2}$ |  |  |
| SUBTOTAAL 2.2            |                      | 19              |  |  |

|                                      |
|--------------------------------------|
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| <b>PUBLIC EXAMINATION</b>            |

VRAESTEL 2 VRAAG 2.2  
GRAAD 12  
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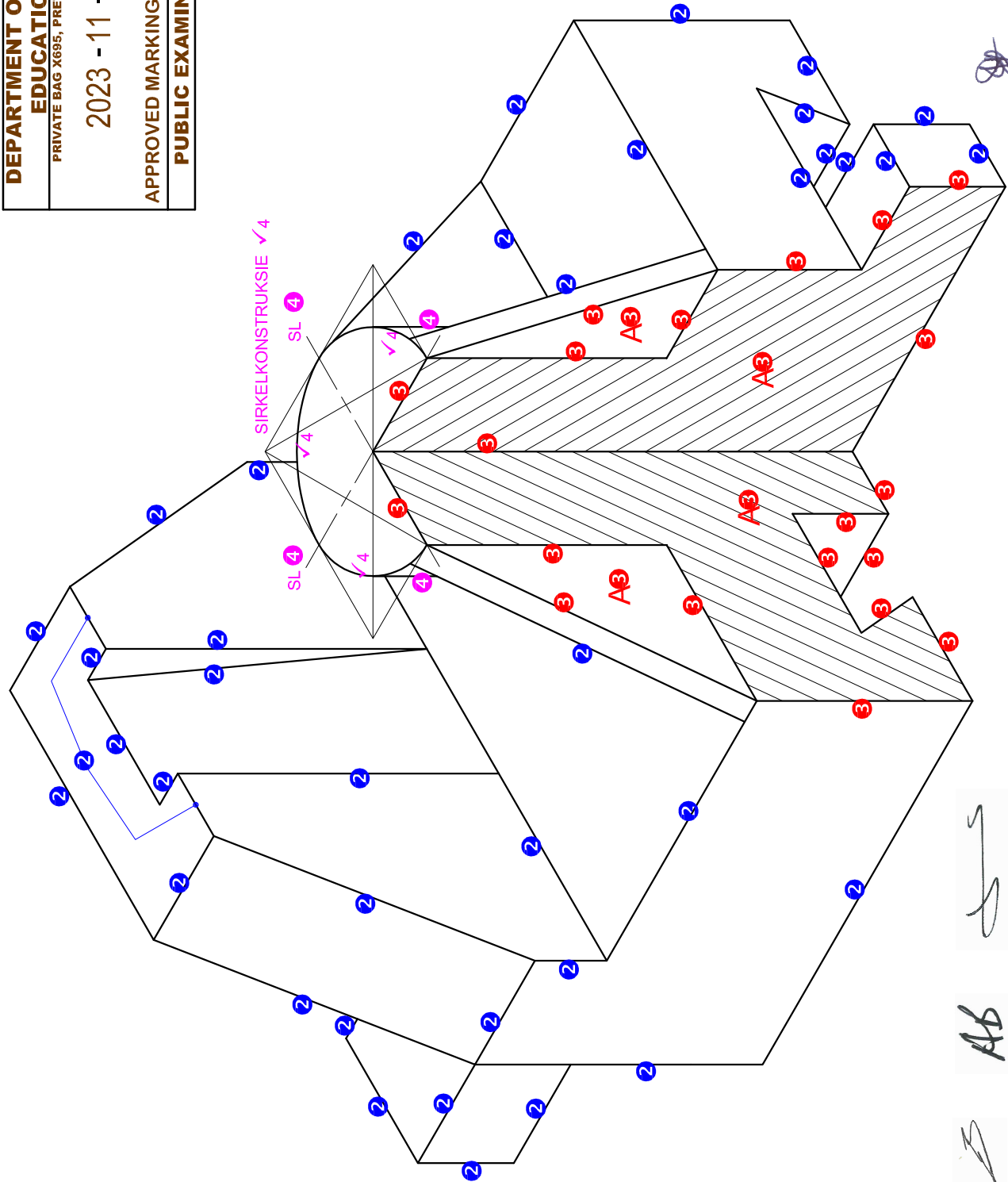
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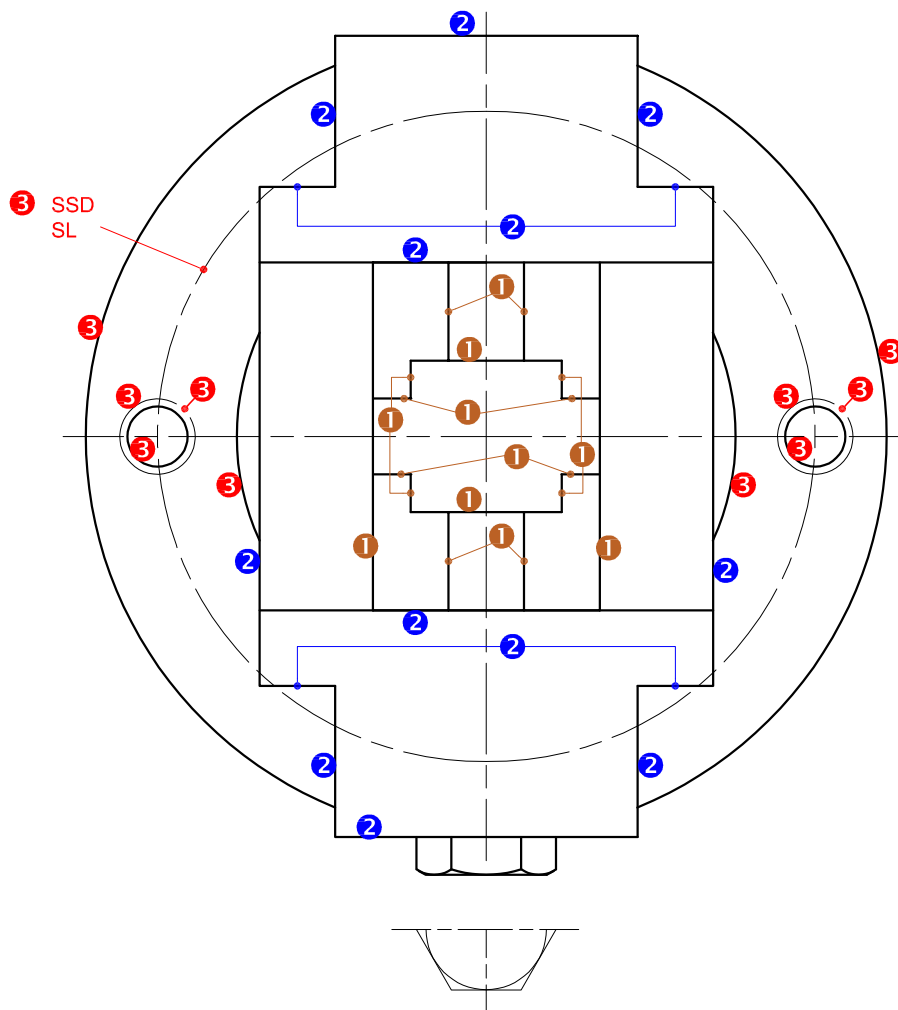
PUBLIC EXAMINATION



✓ 1 PLASING/ORIENTERING

| ASSESSERINGSKRITERIA |                             |
|----------------------|-----------------------------|
| 1                    | PLASING + HULPAANSIG 2      |
| 2                    | VOOR- + MIDDELSTE VLAKKE 20 |
| 3                    | GESNYDE VLAK + ARSERING 12  |
| 4                    | SIRKEL + SL 6               |
| TOTAAL 40            |                             |

VRAESTEL 2 VRAAG 3  
GRAAD 12  
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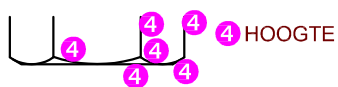


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**ASSESSERINGS-  
KRITERIA**

**LINKERAANSIG**

|                  |           |                 |
|------------------|-----------|-----------------|
| 1                | STEUNSTUK | 5               |
| 2                | KOPPELING | 6               |
| 3                | FLENS     | 5 $\frac{1}{2}$ |
| 4                | M10-BOUT  | 3 $\frac{1}{2}$ |
| <b>SUBTOTAAL</b> |           | <b>20</b>       |

VRAESTEL 2 VRAAG 4  
GRAAD 12  
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**PUNTTOEKENNING VIR DIE BUS**

**PUNTTOEKENNING VIR DIE WOODRUFFSPY**

**PUNTTOEKENNING VIR DIE SEËL**

**8 HEIGHT**

**ASSESSERINGS-KRITERIA**

**DEURSNEE-VOORAANSIG**

|                  |              |           |
|------------------|--------------|-----------|
| 1                | SETERLYNE    | 3         |
| 2                | SAMESTELLING | 9         |
| <b>SUBTOTAAL</b> |              | <b>12</b> |

**ASSESSERINGS-KRITERIA**

**DEURSNEE-VOORAANSIG**

|                  |                   |                  |
|------------------|-------------------|------------------|
| 1                | STEUNSTUK         | 10 $\frac{1}{2}$ |
| 2                | BUS               | 5                |
| 3                | KOPPELING         | 18 $\frac{1}{2}$ |
| 4                | M10-BOUT          | 8                |
| 5                | WOODRUFFSPY       | 2 $\frac{1}{2}$  |
| 6                | FLENS             | 8                |
| 7                | SEËL              | 2                |
| 8                | WASTER + M20-MOER | 5 $\frac{1}{2}$  |
| <b>SUBTOTAAL</b> |                   | <b>60</b>        |

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1. SENTERLYNE  
VOLDOEN AAN SANS  
1 - 4 = 1; 5 - 6 = 2  
(UITSLUITEND SSD SL)

2. SAMESTELLING  
1 PUNT VIR ELKE ONDERDEEL KORREK  
SAAMGESTEL (10 ONDERDELE - 1) = 9

VRAESTEL 2 VRAAG 4  
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