Naam van leerling/*Name of learner*:.....

Hoërskool	**November/*November* 2014**
Graad/*Graae* 9	**Punte/*Marks*: 75**
Wiskunde Tweede Vraestel	**Tyd/*Time*: 1½ uur/*hour***
Mathematics Second Paper	
Eksaminator/*Examinator*:	**Moderator:**

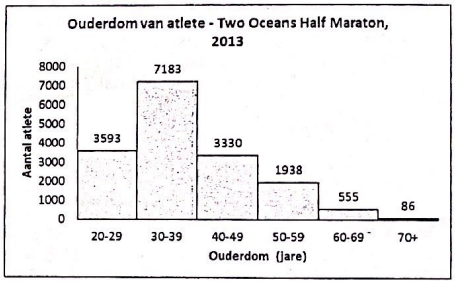
INSTRUKSIES AAN KANDIDATE
INSTRUCTIONS TO CANDIDATES

1. Hierdie vraestel bestaan uit DRIE vrae. Beantwoord AL DRIE die vrae.
   This question paper consists of THREE questions. Answer ALL THREE questions.
2. Beantwoord Vraag 1.2.1 op Diagramblad Skryf jou naam in die spasie wat voorsien word en handig dit saam met jou antwoordstel in.
   Answer Question 1.2.1 on Diagram sheet. Write you name in the space and submit with your answer sheets.
3. Nommer presies soos op die vraestel.
   Number the answers exactly as on the paper.
4. Begin elke vraag op 'n nuwe bladsy en trek 'n lyn na elke vraag . Laat 'n spasie na elke nommer.
   Start each question on a new page and *draw a line at the end of each question. Leave a space between each number.*
5. Jy mag 'n goedgekeurde sakrekenaar gebruik, tensy anders vermeld
   You may use an approved calculator, unless stated otherwise.
6. Wys al jou bewerkings en dit is tot jou voordeel om netjies te werk
   Show all your calculations and it is in your own interest to work neatly.
7. Rond AL die finale antwoorde tot TWEE desimale plekke af, tensy anders aangedui.
   Round off ALL the final answers off to TWO decimal places, unless stated otherwise.
8. Dui meeteenhede aan waar van toepassing.
   Indicate units of measurement, where applicable.
9. Sterkte!
   Good luck!

VRAAG 1
QUESTION 1

1.1 Die histogram hieronder toon die aantal atlete in spesifieke ouderdomsgroepe wat die Twee Oseane Half maraton in Maart 2013 gehardloop het.
Die oudste atleet was 79 jaar.

The histogram below shows the number of athletes in specific age groups who participated in the Two Oceans Half Marathon in March 2013.
The oldest runner was 79 years.



(a) Hoeveel atlete onder 30 jaar het die Twee Oseane Half maraton gehardloop?
How many athletes under 30 years participated in the Two Oceans Half marathon? (1)

(b) In watter ouderdoms groep was die meeste atlete wat die Twee Oseane Half maraton gehardloop het?
In what age group did the most athletes participate in the Two Oceans Half Marathon? (1)

(c) Hoeveel atlete in totaal het die Twee Oseane Half maraton gehardloop?
How many athletes in total participated in the Two Oceans Half marathon? (2)

(d) Vergelyk die aantal atlete jonger as 50 met die wat 50 en ouer was. Beskryf jou waarneming en gee 'n moontlike rede vir wat jy opmerk.
Compare the number of athletes younger than 50 to those 50 and older. Describe your observations and give a possible reason for your observations. (2)

1.2 Die volgende tabel toon die maandellikse reënvalsyfers van twee dorpe oor een jaar.
The following table shows the monthly rainfall figures for two towns over a period of one year.

Maandellikse reënvalsyfers (in mm) *Monthly rainfall figures (in mm)*												
	J	F	M	A	M	J	J	A	S	O	N	D
Dorp A *Town A*	4	7	6	13	19	23	25	17	8	6	5	7
Dorp B *Town B*	14	17	15	5	7	4	3	9	10	11	13	19

1.2.1 Teken 'n gebroke- lyngrafiek van Dorp B op die diagramblad.
Draw a line graph of Town B on the diagram sheet.. (6)

1.2.2 In watter seisoen kry Dorp A die meeste reën?
In what season does Town A get the most rain? (1)

1.2.3 Bepaal die volgende reënval in Dorp A [Wenk: orden die data]
Determine the following rainfall in Town A[Hint; arrange the data in order]

1.2.3.1 gemiddelde
mean (3)

1.2.3.2 mediaan
median (2)

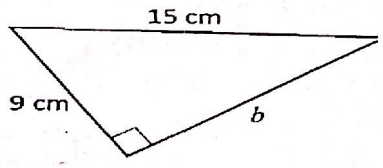
1.2.3.3 modus
mode (2)

1.2.3.4 omvang
range (3)

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VRAAG 2
QUESTION 2

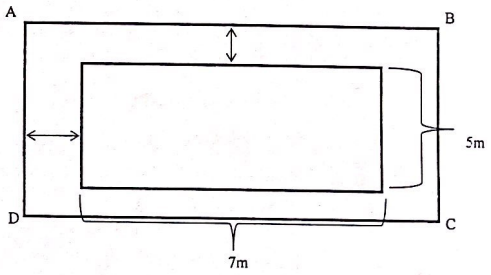
2.1.1 Bepaal die lengte van sy *b*
Determine the length of b.



(3)

2.1.2 Bepaal nou die oppervlakte van die reghoekige driehoek
Determine then the area of the right-angled triangle (3)

2.2 Johan wil 'n sementpaadjie een meter (1m) breed rondom 'n reghoekige swembad, 7m by 5m aanlê. Sien skets hieronder.
Johan wants to build a cement path of one meter (1m) width around a rectangular swimming pool with dimensions, 7m × 5m. See sketch below.



Doen die volgende berekeninge om Johan te help om die totale oppervlakte van die sementpaadjie te bepaal
Do the following calculations to help Johan to determine the total area of the cement path:

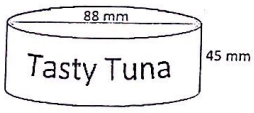
2.2.1 Bepaal die lengte en breedte van reghoek ABCD en vervolgens sy oppervlakte.
Determine the length and width of rectangle ABCD, and then its area. (3)

2.2.2 Bereken die oppervlakte van die swembad.
Calculate the area of the pool (2)

2.2.3 Bereken nou die oppervlakte van die sementpaadjie.
Calculate the area of the concrete path (2)

2.3 'n Silindriese blikkie Tasty Tuna het 'n hoogte van 45 mm en 'n deursnee van 88 mm.
A cylindrical can Tasty Tuna has a height of 45 mm and a diameter of 88 mm.

Neem = 3,14
Take = 3,14



2.3.1 Bereken die volume van die blikkie korrek tot die naaste twee desimale syfers. (3)
Calculate the volume of the can correct to the nearest two decimal places.

2.3.2 Bereken die buite-oppervlakte van die blikkie.
Calculate the surface area of the can. (3)
[19]

VRAAG 3
QUESTION 3

3.1 Voltooi:/ *Complete:*

3.1.1 Die komplement van 40° is ……°
The complement of 40° is ……°

3.1.2 In 'n gelyksydige driehoek is elke hoek ……°
In an equilateral triangle every angle is ……°

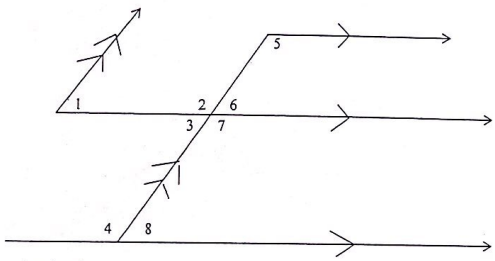
3.1.3 Die supplement van 110° is ……°
The supplement of 110° is ……°

3.1.4 'n Driehoek met twee gelyke sye word 'n …… genoem.
A triangle with two equal sides is called ……

3.1.5 Die supplement van die komplement van 30° is……°
The supplement of the complement of 30° is ……°

(5)

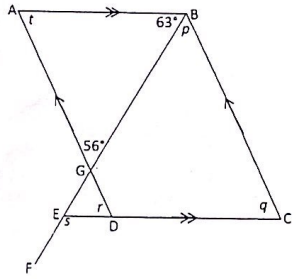
3.2 Kyk n die tekening en identifiseer die volgende pare hoeke:
Look at the drawing and identify the following pairs of angles:



3.2.1. 1 en / *and* 2
3.2.2 5 en / *and* 7
3.2.3 3 en / *and* 8
3.2.4 3 en / *and* 6
3.2.5 4 en / *and* 8

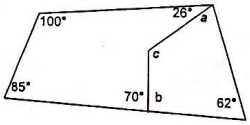
(5)

3.3 In hierdie skets is, AB // EC en AD // BC, ∠ABG = 63° en ∠AGB = 56°
In this sketch, AB // EC and AD // BC, ∠ABG = 63 ° and ∠AGB = 56 °.



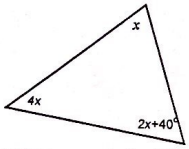
Bereken die grootte van *p, q, r, s* en *t* met redes
Calculate the size of p, q, r, s and t with reasons (11)

3.4 Bereken die grootte van die hoeke a , b en c in die skets hieronder met redes.
Calculate the size of the angles a , b and c in the figure below with reasons



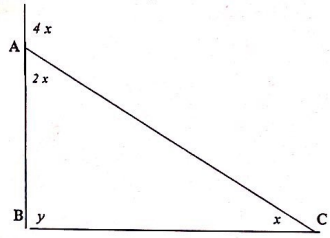
(3)

3.5 Los op vir x in die driehoek hieronder met redes
Solve for x in the triangle below with reasons



(3)

3.6 Bereken die waarde van x en y *in die driehoek hieronder met redes*
Calculate the value of x and y in the triangle below with reasons



(6)

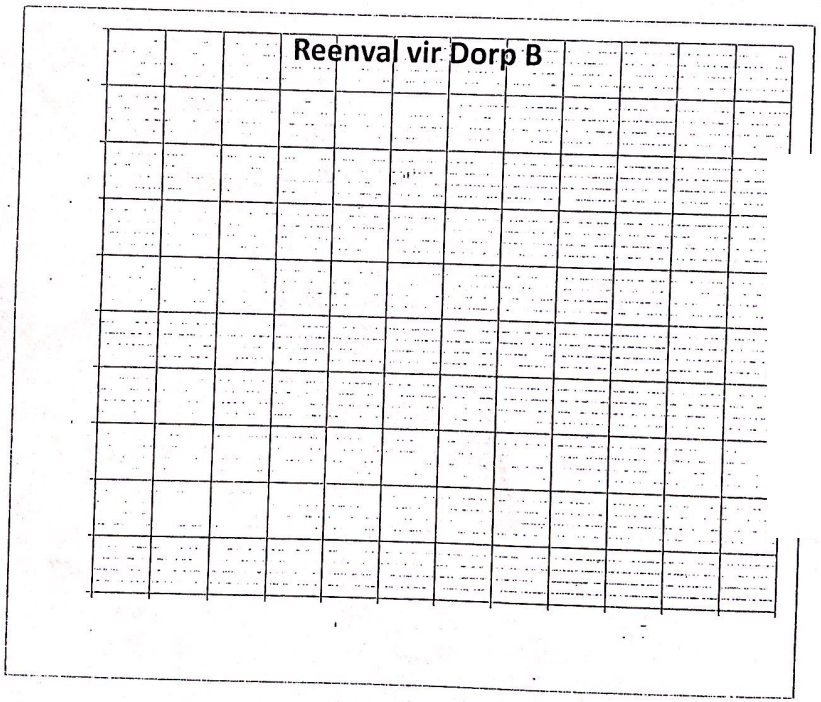
[33]

TOTAAL: 75

DIAGRAMBLAD
DIAGRAM SHEET

NAAM VAN LEERDER:
NAME OF LEARNER: .....

GRADE 8 ( )



Scanned with CamScanner

MEMORANDUM

HOËRSKOOL ..... NOVEMBER 2014

GRAAD 8 ..... PUNTE: 75

WISKUNDE TWEEDE VRAESTEL ..... TYD: 1½ UUR

EKSAMINATOR: ..... MODERATOR: .....

VRAAG 1

1.1)

a) 3593 ✓ 3593

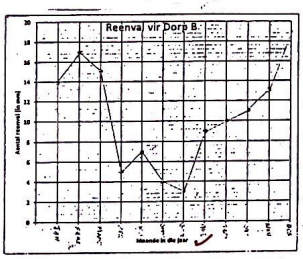
b) 30-39 ✓ 30-39

c) 16685 ✓ ✓ ✓ total / som ✓ antw

d) meer jonger as 50 jaar meer as deel ✓ jonger as 50 in woorde

atlete jonger as 50 jaar in fokus (6) ✓ verwante

1.2.1



✓ X-as benoem ✓ Y-as benoem ✓✓ punte korrek (-1 per fout) ✓ lyn verbind (6)

1.2.2) WINTER (1) ✓ winter

1.2.3.1) $140 \div 12 = 11,67$ reëndae (3) ✓ total ✓ ÷12 ✓ antw

1.2.3.2) 4 5 6 6 7 7 8 13 17 19 2325 ✓ rangskikking

$(7+8) \div 2 = 7\frac{1}{2}$ reëndae (2) ✓ antw

1.2.3.3) 6 en 7 (2) ✓ 6 ✓ 7 ✓ minste

1.2.3.4) $25 - 4 = 21$ reëndae (3) ✓ verskil ✓ antw

[23]

VRAAG 2

2.1.1) $b^2 = 15^2 - 9^2$ (Pyth, 90°C) ✓ Pyth

$= 225 - 81$

$= 144$ ✓ 144

$b = 12$ cm (3) ✓ 12

2.1.2) $A = \frac{1}{2} b \times h$

$= \frac{1}{2} \times 9 \times 12$ ✓ subst in formule

$= 54 cm^2$ (3) ✓ antw ✓ eenhede

2.2.1) $AB = 7 + 2 = 9m$

$BC = 5 + 2 = 7m$ ✓ lengte + breedte

$Area = l \times b$

$= 9 \times 7$ ✓ subst in formule

$= 63 m^2$ (3) ✓ antw

2.2.2) $Area = l \times b$

$= 7 \times 5$ ✓ subst in formule

$= 35 m^2$ (2) ✓ antw

2.2.3) $Paadjie = 63 - 35$ ✓ verskil

$= 28 m^2$ (2) ✓ antw

2.3.1) $V = \pi r^2 h$ ✓ r = 44

$= 3,14 \times 44^2 \times 45$ ✓ subst in formule

$= 273556,8 mm^3$ (3) ✓ antw

2.3.2) $SO = 2\pi r^2 + 2\pi rh$

$= 2 \times 3,14 \times 44^2 + 2 \times 3,14 \times 44 \times 45$ ✓ subst in formule

$= 24592,64 mm^2$ ✓ antw

(3) ✓ eenheid

(75)

VRAAG 3

3.1.1) 50° ✓ 50°

3.1.2) 60° ✓ 60°

3.1.3) 70° ✓ 70°

3.1.4) gelykbenige Δ ✓ Δ

3.1.5) 120° ✓ 120°

(5)

3.2.1) ko-binne ∠e ✓ ko-binne

3.2.2) ooreenkomst ∠e ✓ ooreenkomst

3.2.3) verw ∠e ✓ verw

3.2.4) regoorst ∠e ✓ regoorst

3.2.5) gestrekte ∠ ✓ gestrekte / suppl

(5)

3.3) p = 56° (verw ∠e; BC ∥ AD)
q = 61° (ko-binne ∠e; AB ∥ EC)
r = 61° (ooreenkomst ∠e; AD ∥ BC)
s = 117° (Buite ∠ v Δ)
t = 61 ✓ (3∠e Δ = 180)

(11)

✓ 56°
✓ verw ∠e
✓ BC ∥ AD
✓ 61°
✓ ko-binne ∠e
✓ AB ∥ EC
✓ 61°
✓ ooreenkomst ∠e
✓ AD ∥ BC
✓ 117°
✓ Buite ∠ v Δ
of gestrekte en s v 3 ∠ v Δ

3.4) a = 87° (s v 4 ∠e v □) ✓ 87 met rede
b = 110° (gestrekte ∠) ✓ 110° met rede
c = 101° (s v 4 ∠e v □) ✓ 101° met rede

(3)

3.5) $x + 4x + 2x + 40 = 180$ [3∠e Δ = 180] ✓ vergelyking
$7x = 140$ ✓ rede
$x = 20$ ✓ (3) ✓ x = 20

3.6) $2x + 4x = 180°$ (gestrekte ∠) ✓ vergl
$6x = 180°$ ✓ rede
$x = 30°$ ✓ $x = 30$
$2x + x + y = 180°$ (s v 3 ∠e v Δ) ✓ vergl met rede
$3x + y = 180$
$y = 180 - 3x$
$= 180 - 3(30)$ ✓ subst van $x = 30$
$= 180 - 90$
$= 90°$ ✓

(6) ✓ $y = 90$

[33]