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

Hoërskool	**November/*November* 2014**
Graad/*Grade* 8	**Punte/*Marks*: 75**
Wiskunde Eerste Vraestel	**Tyd/*Time*: 1½ uur/*hour***
Mathematics First Paper	
Eksaminator/*Examinator*:	**Moderator:**

INSTRUKSIES AAN KANDIDATE
INSTRUCTIONS TO CANDIDATES

1. Hierdie vraestel bestaan uit TWEE vrae. Beantwoord ALTWEE die vrae
   This question paper consists of TWO questions. Answer BOTH questions
2. Beantwoord Vraag 2.7.2 op Diagramblad. Skryf jou naam in die spasie wat voorsien word en handig dit saam met jou antwoordstel in.
   Answer Question 2.7.2 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. GEEN sakrekenaar mag gebruik word nie
   NO *calculator may be used.*
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. Sterkte!
   Good luck!

VRAAG 1
QUESTION 1

1.1

0	1	2	3	5	6	10	20

Uit die lys van getalle hierbo skryf neer ALLE getalle wat
From the list of numbers above, write down ALL numbers that...

(a) 'n faktor van 10 is.
is a factor of 10.
(b) veelvoude van 2 is
are multiples of 2.
(c) deelbaar deur 5 is.
divisible by 5.
(d) priemgetalle is
are prime numbers.

(4)

1.2 Vul die ontbrekende getal in om die kante gelyk te maak hieronder
Write the missing number to make the sides equal.

467 940 + (1 670 + 357 865) + 2 678 879 = (467 940 + 1 670) + _____ + 357 865 (1)

1.3 Bestudeer die vier getalle hieronder.

Study the four numbers below.

30	**2**	**8**	**10**

Plaas die getalle in die spasies hieronder sodat die vergelyking korrek is.
Organise these numbers so that each equation is correct.

___ + ___ + ___ — ___ = 24

Gebruik elke getal slegs een keer. Skryf die hele vergelyking neer.
Use each number only once per equation. Write down the whole equation. (4)

1.4 Bereken die volgende en wys al jou bewerkings
Calculate the following and show all calculations

$$\sqrt{5\frac{4}{9}} \times 3^2$$

(4)

1.5 Skryf van groot na klein.
Write from biggest to smallest.

$$\frac{1}{100} \; ; \; \frac{6}{10} \; ; \; \frac{44}{100} \; ; \; \frac{4}{5} \; ; \; \frac{3}{20} \; ; \; \frac{9}{25}$$

(3)

1.6 Watter een is die kleinste? Wenk: Skryf eers getalle in gewone vorm.
Which is the smallest? Tip: Write numbers in normal notation first

$1{,}123 \times 10^5$ of $9{,}2 \times 10^3$ (3)

1.7 Bepaal $\sqrt{2916}$ deur priemfaktore te gebruik (leermetode of faktorboom of enige ander metode).
Determine $\sqrt{2916}$ by using prime factors (ladder method or factor tree or any other method). (3)

1.8 Skryf die volgende verhouding in sy eenvoudigste vorm deur die nodige berekeninge te doen:
Write the following ratio in its simplest form by doing the necessary calculations:

0,5kg : 250g (2)

1.9 Vermeerder R45 in die verhouding 9 : 3
Increase R45 in the ratio 9 : 3 (3)

1.10 'n Meubileerder koop 'n stoel teen 'n kosprys van R250 by 'n groot handelaar en verkoop dit dan teen R325.
A furnisher buys a chair at a cost price of R250 at a wholesaler and sells it at R325.

1.10.1 Bereken sy wins in rand.
Calculate his profit in rand. (1)

1.10.2 Bereken die wins as 'n persentasie van die kosprys.
Calculate the profit as a percentage of the cost price. (3)

1.11 Die nommers 1 tot 15 word in 'n hoed geplaas. Wat is die waarskynlikheid om 'n priemgetal te trek?
The numbers 1 to 15 are placed in a hat. What is the probability to draw a prime number (2)

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VRAAG 2
QUESTION 2

2.1 Bestudeer die volgende uitdrukking en beantwoord die vrae wat volg:
Consider the following expression and answer the questions that follow.

$$-2x - x^3 + 3x^2 + 4(x^2 + 2)$$

2.1.1 Hoeveel terme is daar in die uitdrukking voor vereenvoudiging?
How many terms does the expression have before simplifying? (1)

2.1.2 Gee die graad van die uitdrukking.
Give the degree of the expression (1)

2.1.3 Skryf die konstante in die uitdrukking neer na vereenvoudiging
Write down the constant in the expressionafter simplifying (1)

2.1.4 Skryf die koëffisient van x neer
Write down the coefficient of x (1)

2.1.5 Wat is die eksponent van x in die eerste term?
What is the exponent of x in the first term? (1)

2.1.6 Bepaal die waarde van die uitdrukking indien $x = -1$
Determine the value of the expression if $x = -1$ (2)

2.2 Vereenvoudig:
Simplify:

2.2.1 $\frac{p^4.q^4 \cdot q^2.p^3}{q^6.p^6}$ (3)

2.2.2 $(-8x^4y^2)(5x^3y^4)(-2x)$ (3)

2.2.3 $-5(2x^2 + x - 20) + 12x^2 + 3x$ (3)

2.3 Los op vir x
Solve for x

2.3.1 $4x + 5 = 5x - 9$ (2)

2.3.2 $5(x - 1) - (1 - 2x) = 8$ (4)

2.4 'n Vader is 25 jaar ouer as sy seun. Oor vyf jaar sal hy twee keer so oud as as sy seun wees. Hoe oud is die seun nou?
A father is 25 years older than his son. After five years he will be two times as old as his son. How old is the son now? (4)

2.5 Vind die waardes van x en y in die volgende ry:
Find the values of x any in the following sequence:
2; 5; 8; x; y; .... (2)

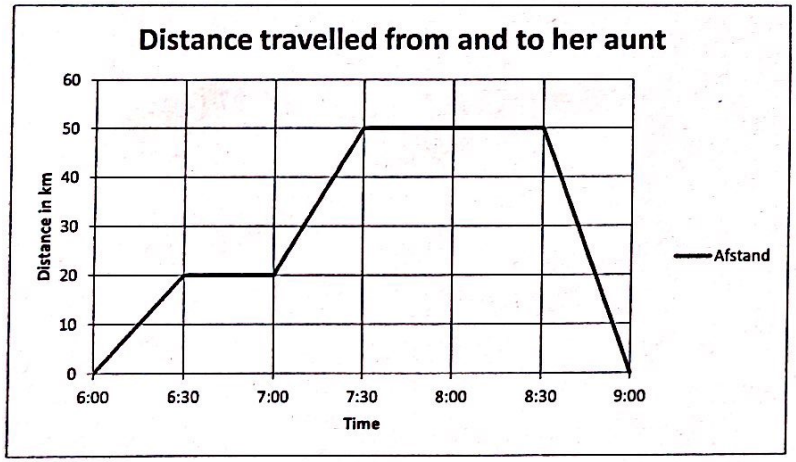
2.6 Ondersoek die gegewe x en y waardes en bepaal die verwantskap tussen x en y. Vind dan die waardes van a en b.
Examine the given x and y values and determine the relationship between x and y. Then find the values of a and b.

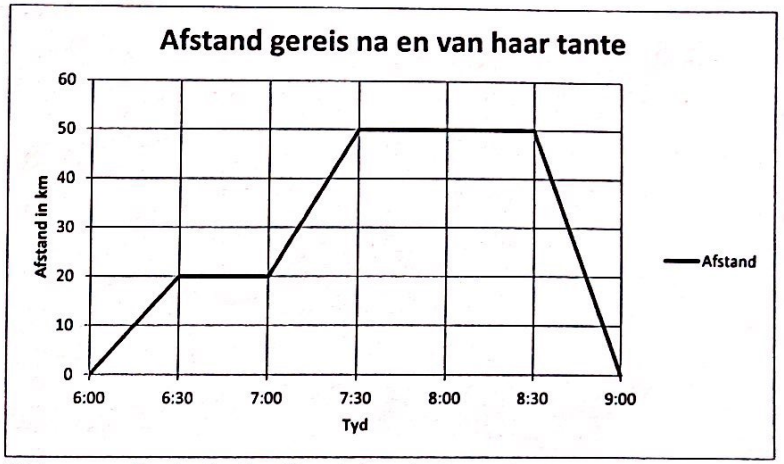
x	1	2	3	4	a	10
y	4	7	10	13	22	b

2.6.1 $y =$ (2)
2.6.2 $a =$ (1)
2.6.3 $b =$ (1)

2.7 Jeanri het haar tante besoek wat 50 km van haar huis woon. Die grafiek toon die afstand wat Jeanri van haar huis weg is tydens die besoek.

Jeanri visited her aunt who stays 50km from their house. The graph below shows how she travelled.





2.7.1 Hoe laat het Jeanri haar huis verlaat?
What time did Jeanri leave her home? (1)
2.7.2 Hoe laat het Jeanri by haar tante se huis aangekom?
What time did she arrive at her aunt's house? (1)
2.7.3 Hoeveel tyd het Jeanri by haar tante deurgebring?
For how long did she stay at her Aunt's house? (1)
2.7.4 Hoe laat het Jeanri weer tuis gekom?
What time did she get back home eventually? (1)

2.8 Gegee $y = 2x - 3$.
Given $y = 2x - 3$.

x	-1	0	1	2	3
y			-1		

2.8.1 Kopieër en voltooi die table
Copy and complete the table (2)

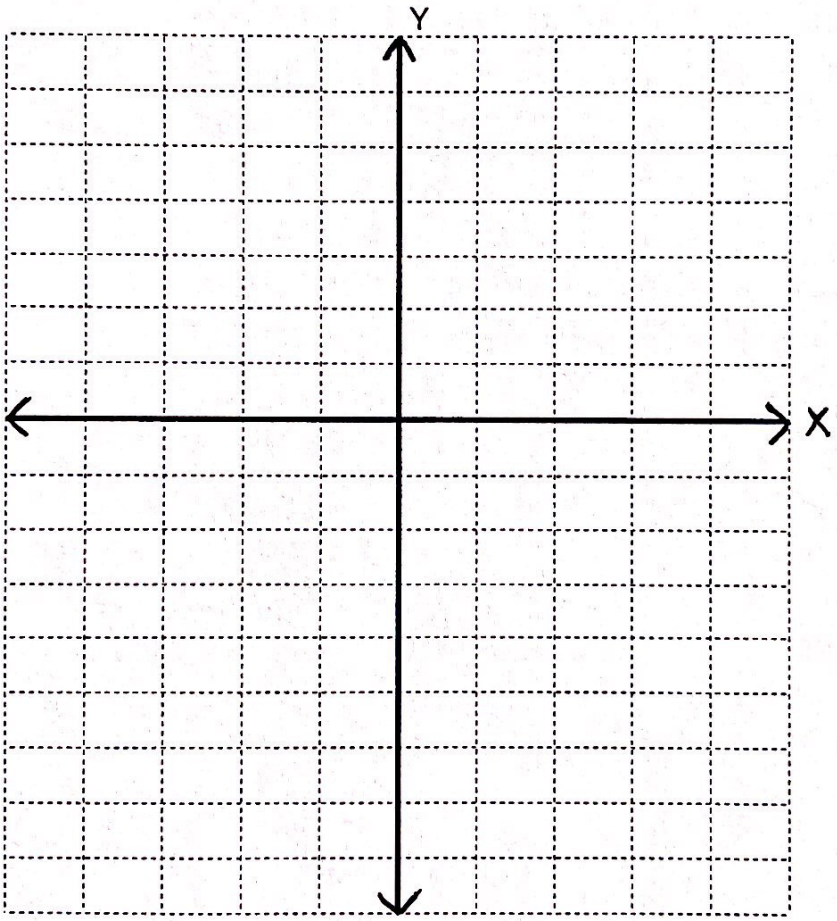
2.8.2 Op die diagramblad steek die punte van die tabel op die Cartesies vlak af. Teken die grafiek
On the diagram sheet plot the points on the Cartesian plane. Draw the graph. (4)
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TOTAAL 75

DIAGRAMBLAD
DIAGRAM SHEET

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

GRADE 8 ( )



MEMORANDUM

HOËRSKOOL
GRAAD 8
WISKUNDE EERSTE VRAESTEL
EKSAMINATOR:

NOVEMBER 2014
PUNTE: 75
TYD: 1½ UUR.
MODERATOR:

VRAAG 1

1.1) a) 1 2 5 10
b) 2 6 10 20
c) 5 10 20
d) 2 3 5 (4)

✓ al 4 getalle
✓ al 4 getalle
✓ al 3 getalle
✓ al 3 getalle

1.2) 2678.879 (4)

✓ antw.

1.3) $30 + 8 \div 2 - 10 = 24$ (4)

✓ ✓ ✓ ✓
$30 + 8 \div 2 - 10$

1.4) $\sqrt{\frac{49}{9}} \times 9$
$= \frac{7}{3} \times \frac{9}{1}$
$= 21$ (4)

✓ $\frac{49}{9}$ ✓ 9
✓ $\frac{7}{3}$
✓ 21

1.5) $\frac{1}{100}; \frac{60}{100}; \frac{44}{100}; \frac{80}{100}; \frac{15}{100}; \frac{36}{100}$
$\frac{80}{100} \quad \frac{60}{100} \quad \frac{44}{100} \quad \frac{36}{100} \quad \frac{15}{100} \quad \frac{1}{100}$
$\frac{4}{5} \quad \frac{6}{10} \quad \frac{44}{100} \quad \frac{9}{25} \quad \frac{3}{20} \quad \frac{1}{100}$ (3)

✓ gemene noemer
✓ dalende
✓ antw alles reg.

1.6) $1,123 \times 10^5$
112300
$9,2 \times 10^3$
9200
∴ 9200 ✓
∴ $9,2 \times 10^3$ (3)

✓ 112 duisend
✓ 9 duisend
✓ antw

1.7) 2 | 2916
2 | 1458
3 | 729
3 | 243
3 | 81
3 | 27
3 | 9
3 | 3
| 1

✓ ✓ deling

✓ $2^2 \times 3^6$
$= 2 \times 3^3$
$= 2 \times 27$
$= 54$ (3)

✓ priemfaktore
✓ antw

1.8) 0,5 kg : 250 g
500 : 250
2 : 1 (2)

✓ albei in gram
✓ eenvoudigste antw.

1.9) $\frac{9}{3} \times \frac{45}{1}$
135 (3)

✓ $\frac{9}{3}$ ✓ $\times \frac{45}{1}$
✓ antw.

1.10.1) $325 - 250 = R75$ (1)

✓ antw

1.10.2) $\frac{75}{250} \times \frac{100}{1}$ ✓ ✓
30 % ✓ (3)

✓ $\frac{75}{250}$ ✓ $\times 100$
✓ antw

1.11) $\frac{6}{15} = \frac{2}{5}$ (2)

✓ noemer
✓ teller

[33]

VRAAG 2

2.1.1) 4 termne ✓ antw.

2.1.2) 3 ✓ antw.

2.1.3) 8 ✓ antw.

2.1.4) -2 ✓ antw.

2.1.5) 1 ✓ antw.

2.1.6) $-2(-1)-(-1)^3+3(-1)^2+4(-1)^2+8$ ✓ subst

$= 2+1+3+4+8$

$= 18$ (7) ✓ antw.

2.2.1) $p\,q^0$ ✓ p^{4+3-6} ✓ q^{4+2-6}

$= p.$ (3) ✓ antw.

2.2.2) $80x^8y^6$ (3) ✓80 ✓x^8 ✓y^6

2.2.3) $-10x^2-5x+100+12x^2+3x$ ✓verm( ) ∴100

$2x^2-2x+100$ (3) ✓$-8x^2$ ✓$-2x$.

2.3.1) $4x+5=5x-9$

$4x-5x=-9-5$ ✓ LK=x en RK= konstantes.

$-x=-14$

$x=14$ (2) ✓ antw

2.3.2) $5(x-1)-(1-2x)=8$

$5x-5-1+2x=8$ ✓ verm( )

$5x+2x=8+5+1$ ✓ LK=x en RK= konstantes

$7x=14$ ✓ $7x=14$

$x=2$ (4) ✓ $x=2$.

2.4) sem = x

Vaders = $x+25$ } Nou ✓

Oor 5 jaar: sem = $x+5$

Vaders = $x+30$ } oor 5 jaar ✓

$2(x+5)=x+30$ ✓ vergelyking.

$2x+10=x+30$

$x=20$

∴ sem is nou 20 (4) ✓ 20 jaar.

2.5) $x=11$ ✓11

$y=14$ (2) ✓14

2.6.1) $y=3x+1$ ✓3x ✓+1

2.6.2) $a=22-1\div 3$

$=7$ ✓a=7

2.6.3) $b=3(10)+1$

$=31$ (4) ✓ b=31

2.7.1) 6.00 ✓ 6.00

2.7.2) 7.30 ✓ 7.30

2.7.3) 1 uur / 60 min ✓ 1 uur

2.7.4) 9.00 (4) ✓ 9.00

2.8.1)

x	-1	0	1	2	3
y	-5	-3	-1	1	3

(2) ✓ -5 en -3 ✓ 1 en 3

2.8.2) DIAGRAMBLAD (3) ✓✓ punte [-1 per fout]

(1) ✓ lyn.

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