

Mathematics Challenge

GRADE 5 FINAL ROUND
14 OCTOBER 2003

NOTE:

- Answer the questions according to the instructions on the answer sheet.
- You may use a calculator.
- The questions test insight. Complex calculations will therefore not be necessary.
- We hope you enjoy it!

Wiskunde-uitdaging

GRAAD 5 FINALE RONDE
14 OKTOBER 2003

LET OP:

- Beantwoord die vrae volgens die instruksies op die antwoordblad.
- Jy mag 'n sakrekenaar gebruik.
- Die vrae toets insig. Omslagtige berekeninge is dus onnodig en tydrowend.
- Ons hoop jy geniet dit!

Umceli-mngeni Ngezibalo

GRADE 5 UMJIKELO WOKUGQIBELA
14 OKTHOBHA 2003

QAPHELA:

- Phendula imibuzo ngokwemigaqo ekwiphepha olinikiweyo
- Ungayisebenzisa i-Calculator
- Imibuzo ivavanya ukuqonda kwakho. Izibalo ezide, ezixhakaxhaka aziyomfuneko.
- Siyathemba uyakulonwabela!

1. At the 2003 World Championships, Hestrie Cloete improved the women's African high-jump record by 1 cm to 2,06 m. What was the old record?

1. By die 2003 Wêreldkampioenskappe het Hestrie Cloete die vroue hoogspringrekord met 1 cm na 2,06 m verbeter. Wat was die ou rekord?

1. Kwimidlalo yamazwe ehlabathi yama 2003, U Hestrie Cloete wathi waliphucula nge 1 cm ukuya kwi 2,06m irekhodi lokutsiba lamanenekazi aseAfrika. Ingaba irekhodi endala yayisithini?



(A) 1,06 m

(B) 1,96 m

(C) 2,05 m

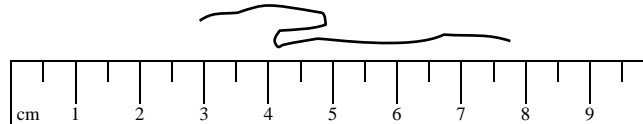
(D) 2,059 m

(E) 2,01 m

2. If the string in the diagram is pulled straight, which of the following is closest to its length?

2. As die tou in die diagram reguit getrek word, watter een van die volgende is die naaste aan sy lengte?

2. Ukuba lontanjana ikulo mzobo inokuthi yolulwe, ingaha ngowuphi kule milinganiso ilandelayo ongowona usondeleyo ngobude?



(A) 12 cm

(B) 5 cm

(C) 6 cm

(D) 7 cm

(E) 8 cm



In cooperation with the
Western Cape Education Department
Gauteng Education Department

Nasou Via Afrika



CASIO

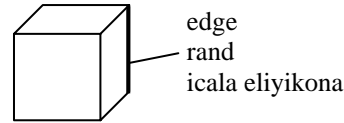
RUMEUS

Research Unit for Mathematics Education
of the University of Stellenbosch

3. This picture shows a cube with one edge marked. How many edges does the cube have altogether?

3. Hierdie prentjie wys 'n kubus waarvan een rand gemerk is. Hoeveel rande het 'n kubus altesaam?

3. Lo mzobo ubonisa ityhubhu enecala eliyikona elinye elithe lenziwe mnyama. Mangaphi amacala azikona ewonke ale tyhubhu?



(A) 4

(B) 6

(C) 8

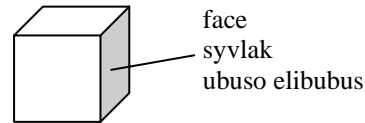
(D) 9

(E) 12

4. This picture shows a cube with one face marked. How many faces does the cube have altogether?

4. Hierdie prentjie wys 'n kubus waarvan een syvlak gemerk is. Hoeveel syvlakke het 'n kubus altesaam?

4. Lo mzobo ubonisa ityhubhu enecala elibubuso elenziwe mnyama. Mangaphi amacala abubuso ewonke ale tyhubhu?



(A) 4

(B) 6

(C) 8

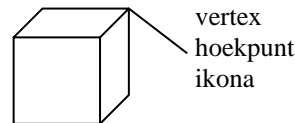
(D) 9

(E) 12

5. This picture shows a cube with one vertex marked. How many vertices does the cube have altogether?

5. Hierdie prentjie wys 'n kubus waarvan een hoekpunt gemerk is. Hoeveel hoekpunte het 'n kubus altesaam?

5. Lo mzobo ubonisa ityhubhu enekona enye obonisweyo. Zingaphi ikona zizonke zale tyhubhu?



(A) 4

(B) 6

(C) 8

(D) 9

(E) 12

6. Mandy bought 10 postcards at 95c each, and 10 stamps at R1,20 each. How much change did she get from R40?

6. Mandy koop 10 poskaarte teen 95c elk en 10 seëls teen R1,20 elk. Hoeveel kleingeld kry sy as sy met R40 betaal?

6. U Mandy wathenga amakhadi eposi ngama 95c lilinye, kunye nezitampu ezili 10 nge R1,20 sisinye. Wabuyelwa yimalini ukuba wahluwula ama R40?

(A) R18,50

(B) R17,50

(C) R21,50

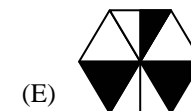
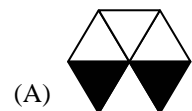
(D) R19,50

(E) R20,50

7. Jasper drops a stone on each of these targets. Which target has the best chance that the stone will land on a shaded area?

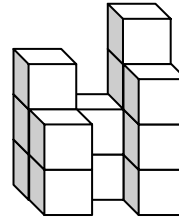
7. Jasper laat val 'n klip op elkeen van die teikens. Op watter teiken is die kans die grootste om op 'n gekleurde deel te land?

7. U Jasper uthe wagibiselela ilitye kumzobo ngamnye kule. Ngowuphi ongowona mzobo ungecono anokuthi agibiselele kuwo aze achana indawo eyenziwe mnyama?



8. How many blocks did Freddie use to build this figure?

8. Hoeveel blokkies het Freddie gebruik om hierdie vorm te bou?



8. Zingapi iibhokisi ezisetyenziswe ngu-Freddie ukwakha esi sakiwo?

(A) 9

(B) 11

(C) 12

(D) 14

(E) 15

9. For his party, Justin bought a Super-Duper Pizza and cut it into 24 equal pieces. At the party, Mary ate $\frac{1}{6}$ of the pizza, Veronica ate $\frac{1}{4}$ of it, and Ron ate $\frac{1}{3}$ of it. Justin ate the rest. How many pieces did Justin eat?

9. Vir sy partytjie koop Justin 'n Super-Duper Pizza en sny dit in 24 ewe groot stukke. By die partytjie eet Mary $\frac{1}{6}$ van die pizza, Veronica eet $\frac{1}{4}$ en Ron eet $\frac{1}{3}$. Justin eet die res. Hoeveel stukke het Justin geëet?

9. Kwi Party yakhe u Justin wathenga i pizza ebizwa ngokuba yi Super Duper waze wayisika yaba zizilayi ezilinganayo ezingama 24. U Mary wathi watya isi $\frac{1}{6}$ sale pizza, u Veronica watya i $\frac{1}{4}$ yayo, u Ron watya isi $\frac{1}{3}$ yayo waza u Justin watya eshiyekileyo. Zingaphi izilayi ezatyiwa ngu Justin?

(A) 4

(B) 6

(C) 8

(D) 2

(E) None of these
Nie een hiervan nie
Ayiko kwezi

10. In a certain school there are 5 boys for every 6 girls. If there are 150 girls, how many boys are there in the school?

10. In 'n sekere skool is daar 5 seuns vir elke 6 meisies. As daar 150 meisies is, hoeveel seuns is daar in die skool?

10. Kwisikolo esithile kumantombazana ama 6 kukho amakhwenkwe ama 5. Ukuba amantombazana ali 150 mangaphi amakhwenkwe?

(A) 125

(B) 120

(C) 180

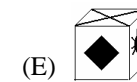
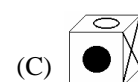
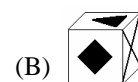
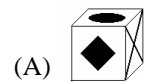
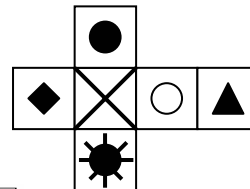
(D) 30

(E) 250

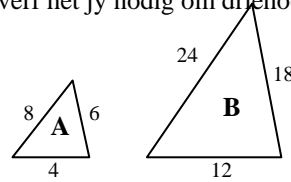
11. Which of these cubes *cannot* be folded from this net?

11. Watter kubus kan *nie* gevou word uit hierdie net nie?

11. Zeziphi kwezi tyhubhu *ezingenakho* ukugotywa xa kusetyenziswe le nethi?



12. Two triangles, with given side lengths, are shown. To paint triangle A you need 4 ml of paint. How many millilitres of paint do you need to paint triangle B?



(A) 12

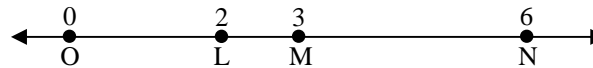
(B) 18

(C) 24

(D) 36

(E) 48

13. On the number line, point P (not shown) is located 5 units from point N and 2 units from point M. Where is point P located?



(A) To the left of O

(B) Between O and L

(C) Between L and M

(D) Between M and N

(E) To the right of N

13. Op die getalrelyn is punt P (nie gewys nie) 5 eenhede vanaf punt N en 2 eenhede vanaf punt M. Waar lê punt P?

(A) Links van O

(B) Tussen O en L

(C) Tussen L en M

(D) Tussen M en N

(E) Regs van N

12. Oonxantathu ababini, ekuboniswe ubude bamacala abo, bazotywiwe. Ukuze ukwazi ukupeyinta unxantathu A udinga isi 4 ml zepeyinti. Ingaba zingaphi ii mililitha zepeyinta ezidingekayo ukuze ukwazi ukupeyinta unxantathu B?

13. Kulo mgca manani, ichokoza u P (elingaboniswa) libekwe lakumgama oyimilanganiso emi 5 ukusuka kwichokoza u N laza layimilanganiso emi 2 ukusuka kwichokoza u M. Ingaba ichokoza u P libekwe kweyiphi indawo?

(A) Ngasekhohlo kwechokoza u O

(B) Ngaphakathi kwamachokoza u O no L

(C) Ngaphakathi kwamachokoza u L no M

(D) Ngaphakathi kwamachokoza u M no N

(E) Ngasekunene kwechokoza u N

14. There is a third of a litre of milk left over. Markus drinks half of that. How many litres of milk is now left over?

(A) $\frac{1}{6}$

(B) $\frac{2}{5}$

14. Daar is 'n derde van 'n liter melk oor. Markus drink helfte daarvan. Hoeveel liter melk bly nou oor?

(C) $\frac{1}{5}$

(D) $\frac{1}{3}$

14. Kukho isinye kwisithathu selitha yobisi oluseleyo. U Markus wathi wasela isiqingatha solu bisi luseleyo. Ziingaphi iilitha zobisi oluseleyo ngoku?

(E) $\frac{1}{4}$

15. A light flashes every six minutes and a bell rings every eight minutes. If the light flashes as the bell rings, after how many minutes will this happen again at the same time?

(A) 14

(B) 48

15. 'n Lig flits elke 6 minute en 'n klokkie lui elke 8 minute. As die lig flits terwyl die klokkie gelyktydig lui, na hoeveel minute sal dit weer gelyktydig gebeur?

(C) 12

(D) 24

15. Isibane sithi sikhanye rhoqo emva kwemizuz emithandathu ize intsimbi yona ikhale rhoqo emva kwemizuzu esibhozo. Ukuba isibane sithi sikhanye xa intsimbi ikhalayo, kuyakudlula imizuzu emingaphi ukuze lonto iphinde yenzeke kwakhona?

(E) 36

16. The first odd number is 1, the second is 3, the third is 5. What is the hundredth odd number?

(A) 99

(B) 101

16. Die eerste onewe getal is 1, die tweede is 3 en die derde is 5. Wat is die honderdste onewe getal?

(C) 199

(D) 201

16. Inani lokuqala elingumnqakathi sisi 1, elesibini sisi 3, elesithathu sisi 5. Elekhulu inani elingumnqakathi lingubani?

(E) 299

17. What do you have to do to the number in column A to get the number next to it in column B?

17. Wat moet jy met die getal in kolom A maak om die getal langs hom in kolom B te kry?

17. Kufuneka wenze ntoni kwinani elikuluhlu A ukuze ufumane unani elikuluhlu B?

A	B
10	2
15	3
25	5
50	10

- (A) Add 8 to the number in column A
 (B) Subtract 8 from the number in column A
 (C) Multiply the number in column A by 5
 (D) Divide the number in column A by 5
 (E) None of these

- (A) Tel 8 by die getal in kolom A
 (B) Trek 8 af van die getal in kolom A
 (C) Vermenigvuldig die getal in kolom A met 5
 (D) Deel die getal in kolom A deur 5
 (E) Nie een hiervan nie

- (A) Dibanisa isi 8 kwinani elikuluhlu A
 (B) Thabatha isi 8 kwinanai elikuluhlu A
 (C) Phindaphinda inani elikuluhlu A ngesi 5
 (D) Yohlula inani elikuluhlu A ngesi 5
 (E) Ayikho kwezi

18. Three different numbers are written on cards. The sum of the first and the second is 15 and the sum of the second and third is 17. No card is a 7, or more than 9. What number is written on the third card?

18. Drie verskillende getalle word op kaarte geskryf. Die som van die eerste en die tweede is 15 en die som van die tweede en die derde is 17. Geen kaart is 'n 7 of is meer as 9 nie. Watter getal is op die derde kaart?

18. Amanani amathathu ahlukileyo abhalwe emakhadini abekwe elinye ecaleni kwelinye. Elokuqala nelesithathu akhupha 15 xa edityaniswa. Elesibini nelesithathu akhupha 17 xa edityaniswa. Alikho kula manani elisisi 7 okanye elingaphezu kwesi 9. Leliphi inani elibhalwe kwikhadi lesithathu?

(A) 6

(B) 7

(C) 8

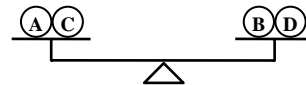
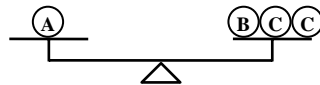
(D) 9

(E) 5

19. How many 'C' balls does it take to balance one 'A' ball?

19. Hoeveel 'C'-balle is nodig om een 'A'-bal te balanseer?

19. Ngokwakulo mzobo ziingaphi iibhola ezichazwe 'C' ezinokuba nomlinganiselo ofanayo nowebhola enye echazwe 'A'?



(A) 3

(B) 4

(C) 5

(D) 6

(E) 7

20. When my mother was 40, I was 16. Now she is twice as old as I am. How old am I?

20. Toe my ma 40 was, was ek 16. Nou is sy twee keer so oud soos ek. Hoe oud is ek?

20. Xa umama wam wayeneminyaka engama 40 ndandineminyaka eli 16. Ngoku iminyaka yakhe iyiphinda kabini eyam iminyaka. Ndimdala kangakanani?

(A) 16

(B) 32

(C) 48

(D) 24

(E) 20

21. The sum of the three digits of a three-digit number is 25. How many such three-digit numbers are there?

21. Die som van die drie syfers van 'n driesyfergetal is 25. Hoeveel sulke driesyfergetalle is daar?

21. Ii dijithi zenani eline dijithi ezintathu ziba ngama 25 xa zidityanisiwe. Mangaphi amanani anjalo ane dijithi ezintathu anokwenzeka?

(A) 2

(B) 4

(C) 6

(D) 8

(E) 10

22. Here is a subtraction problem, but the problem is missing:

$$\begin{array}{r} ?? \\ - ?? \\ \hline 63 \end{array}$$

How many different two-digit subtraction problems could have the answer 63?

- (A) 15 (B) 20

22. Hier is 'n aftrek-probleem, maar die probleem is uitgelaat:

$$\begin{array}{r} ?? \\ - ?? \\ \hline 63 \end{array}$$

Hoeveel verskillende twee-syfer aftrek-probleme kan die antwoord 63 hê?

- (C) 25 (D) 26

22. Nasi isibalo sokuthabatha, kodwa amanani aso akabonakali:

$$\begin{array}{r} ?? \\ - ?? \\ \hline 63 \end{array}$$

Zingaphi izibalo zokuthabatha ezisebenzisa amanani ane dijithi ezimbini ezinokuba nesiphumo sama 63?

- (E) 27

23. In a class of 50 children there are boys and girls who are 10 or 11 years old. Fourteen are 10-year-old girls, 31 are boys and 18 are 11 years old. How many are 11-year-old boys?

- (A) 13 (B) 14

23. In 'n klas van 50 kinders is daar meisies en seuns wat of 10 of 11 jaar oud is. Veertien is 10-jarige meisies, 31 is seuns en 18 is 11 jaar oud. Hoeveel is 11-jarige seuns?

- (C) 31 (D) 5

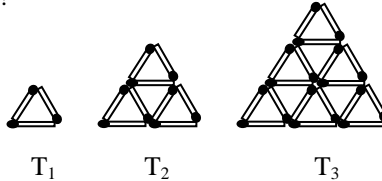
23. Kwiklasi yabantwana abangama 50 kukho amakhwenkwe namantombozana aneminyaka eli 10 okanye eli 11 ubudala. Abali 14 ngamantombaza aneminyaka eli 10 ubudala, abangama 31 ngamakhwenkwe baze abali 18 babe neminyaka eli 11 ubudala. Mangaphi amakhwenkwe aneminyaka eli 11 ubudala?

- (E) 18

24. Siphso builds a sequence of triangular patterns with matches as shown. In T_1 there is one triangle and in T_2 there are four triangles. How many triangles will there be in T_{10} ?

- (A) 30 (B) 60

24. Siphso bou 'n ry driehoekpatrone met vuurhoutjies soos hieronder. In T_1 is daar een driehoek en in T_2 is daar vier driehoeke. Hoeveel driehoeke is daar in T_{10} ?



- (C) 121 (D) 120

24. U Siphso wathi wokha imizobo yonxantathu esebenzisa imicinga njengokuba kubonisiwe. Kumzobo T_1 kukho unxantathu omnye kuze kumzobo T_2 kubekho oonxantathu abane. Ingaba kuyakubakho oonxantathu abangaphi kumzobo T_{10} ?

- (E) 100

25. In question 24, T_1 has three matches and T_2 has 9 matches. How many matches does Siphso need to build pattern T_{10} ?

- (A) 150 (B) 180

25. In vraag 24: T_1 het drie vuurhoutjies en T_2 het 9 vuurhoutjies. Hoeveel vuurhoutjies het Siphso nodig om T_{10} te bou?

- (C) 135 (D) 165

25. Kumbuzo wama 24, umzobo T_1 umenicinga emithathu uze umzobo T_2 ube nemicinga eli 9. Mingaphi imicinga ayidingayo u Siphso ukuze akwazi ukokha umzobo T_{10} ?

- (E) 300