

# **Mathematics Challenge**

## **GRADE 4 FINAL ROUND**

### **31 OCTOBER 2001**

NOTE:

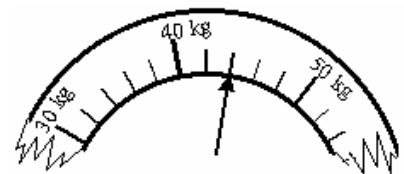
- Answer the questions according to the instructions on the answer sheet.
- You may use a calculator.
- The questions test insight. Complex calculations will therefore not be necessary.
- We hope you enjoy it!

1. What mass is indicated on the scale?

(A) 42 kg

(B) 40,2 kg

1. Watter massa word op die skaal aangedui?



(C) 44 kg

(D) 40,4 kg

(E) 47 kg

2. Which number is exactly halfway between 64 and 96?

(A) 79

(B) 81

2. Watter getal is presies halfpad tussen 64 en 96?

(C) 82

(D) 80

2. Leliphi inani elilelona liphakathi kwama 64 nama 96?

(E) 78



In cooperation with the  
**Western Cape**  
**Education Department**



**Nasou Via Afrika**

**CASIO**

**RUMEUS**  
Research Unit for Mathematics Education  
of the University of Stellenbosch

# **Wiskunde-uitdaging**

## **GRAAD 4 FINALE RONDE**

### **31 OKTOBER 2001**

LET OP:

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

# **Umceli-mnjeni Ngezibalo**

## **GRADE 4 UMJIKELO WOKUGQIBELA**

### **31 OCTOBER 2001**

QAPHELA:

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

- 
- |   |  |  |
|---|--|--|
| <p>3. Wat is die volgende getal in die patroon?<br/>0,93 ; 0,95 ; 0,97 ; 0,99 ; ____<br/>(A) 0,999      (B) 0,101</p>   | <p>3. What is the next number in the pattern?<br/>0,93 ; 0,95 ; 0,97 ; 0,99 ; ____<br/>(C) 1,01      (D) 1</p> | <p>3. Leliphi inani elilandelayo kolu luhlu?<br/>0,93 ; 0,95 ; 0,97 ; 0,99 ; ____<br/>(E) 1,03</p> |
| <p>4. What will the missing three numbers in this number pattern be?<br/>100; 81; 64; ____; ____; ____; 16; 9; 4; 1<br/>(A) 45; 26; 7      (B) 47; 30; 13      (C) 49; 36; 25      (D) 36; 25; 16      (E) None of these<br/>(E) Nie een hiervan nie<br/>Asikho kwezi</p>   |  |  |
| <p>5. If 3 apples cost 72c, how much will 12 apples cost?<br/>(A) R3,00      (B) R2,88      (C) R2,44      (D) R2,12      (E) R2,10</p>   |  |  |
| <p>6. A chicken is placed in the oven at 09:15. If the chicken takes 1 hour 50 minutes to roast, when should it be taken out of the oven?<br/>(A) 10:05      (B) 10:50      (C) 11:15      (D) 11:05      (E) 10:65</p>   |  |  |
| <p>7. 102 marbles are divided among 7 boys. How many more marbles are still needed so that each boy will receive the same number of marbles and there are none left over?<br/>(A) 1      (B) 2      (C) 3      (D) 4      (E) 5</p>   |  |  |
| <p>7. 102 albasters word tussen 7 seuns verdeel. Hoeveel albasters is nog nodig sodat elke seun dieselfde getal albasters sal hê en daar niks sal oorbly nie?<br/>(A) <math>200 \times 50</math>      (B) <math>10 \times 200</math>      (C) <math>120 \times 400</math>      (D) <math>9 \times 6000</math></p> |  |  |
| <p>7. Amabhastile ali 102 ahlulelwé amakhwenkwe asi 7.. Mangaphi amabhastile afunekayo ngaphezulu kweli nani ukuze inkwenkwe nganye izuze amabhastile alinganayo kungabikho asalayo?<br/>(E) Almal ewe veel<br/>Ziyafana zonke</p>  |  |  |
| <p>8. Which of the following has the most zeros in the answer?<br/>(A) <math>200 \times 50</math>      (B) <math>10 \times 200</math>      (C) <math>120 \times 400</math>      (D) <math>9 \times 6000</math><br/>(E) All the same</p>   |  |  |
| <p>8. Watter een van die volgende het die meeste nulle in die antwoord?<br/>(A) <math>200 \times 50</math>      (B) <math>10 \times 200</math>      (C) <math>120 \times 400</math>      (D) <math>9 \times 6000</math><br/>(E) Almal ewe veel<br/>Ziyafana zonke</p>   |  |  |
-

9. The table shows the popularity votes for the 8 remaining housemates in the Big Brother TV program on 23 October. Who received the third most votes?

(A) Ferdinand

(B) Leigh

9. Die tabel toon die stemme vir die oorblywende 8 huismaats in die Big Brother TV program op 23 Oktober. Wie het die derde meeste stemme getrek?

Name	No of votes
Steven	30132
Margaret	117008
Irvan	38164
Nobesuthu	9411
Ferdinand	248794
Vuyo	20604
Riaad	14919
Leigh	73446

(D) Margaret

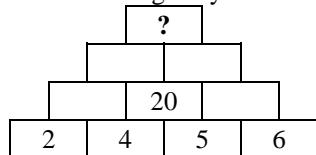
(E) Irvan

10. In this number wall you multiply the two numbers next to each other and write the product in the brick directly above the two numbers e.g.  $4 \times 5 = 20$ . Which number will be written in the top brick?

(A) 960

(B) 9 600

10. In hierdie getal-muur vermenigvuldig jy die twee getalle langs mekaar en skryf die produk in die blok direk bo die twee getalle bv.  $4 \times 5 = 20$ . Watter getal sal in die boonste blok geskryf word?



(C) 960 000

(D) 96

(E) 96 000

11. Three children, Alan, Brenda and Carly are walking up a long flight of stairs.  
Alan climbs the stairs one step at a time.  
Brenda climbs two steps at a time.  
Carly climbs three steps at a time.  
What is the first step that they will all land on?

(A) 2

(B) 3

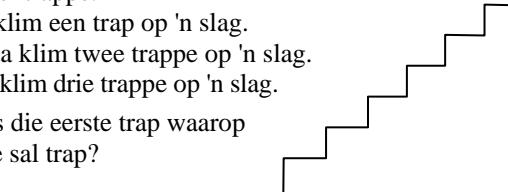
11. Drie kinders, Alan, Brenda en Carly klim 'n hoë stel trappe.  
Alan klim een trap op 'n slag.  
Brenda klim twee trappe op 'n slag.  
Carly klim drie trappe op 'n slag.  
Wat is die eerste trap waarop al drie sal trap?

(C) 4

(D) 6

(E) 8

9. Le tafile yamanani ibonisa indlela abantu abavota ngayo ukubonisa uthando lwabo kubahlali abasi 8 abashiyeyleyo kumboniso kamabonakude obizwa ngokuba yi Big Brother kwiveki yama 23 ka Oktobha. Ngubani othe wafumana inani levoti elimbeka kwindawo yesithathu?



10. Kolu donga lwamanani inani ngalinye lisisiphumo sokuphindaphindwa kwamanan amabini angezantsi kwalo umz.  $4 \times 5 = 20$ . Lingubani inani elinobhalwa kwesona sitena singaphezulu?

11. Abantwana abathathu, u Alan, uBrenda kunye no Carly benyuka kumanqwanqwa(stairs) amaninzi esakhwi. U Alan wenyuka ehamba inqwanqwa ngalinye ngexesha. U Brenda wenyuka eqabela amanqwanqwa amabini ngexesha. U Carly wahamba eqabela amanqwanqwa ama thathu ngesha. Linqwanqwa lesingaphi abazokuthi bonke baliqabele ngexesha elinye?

12. A clock loses time at 3 minutes per hour. It is set correctly at 13:00. What will the clock read when the correct time is 10:00 the next day?

(A) 09:57

(B) 09:03

(C) 11:03

(D) 08:57

(E) 10:57

13. At school A a bell rings every half hour and at school B a bell rings every 35 minutes. If the two bells ring together at 08:00, when will they ring together again?

(A) 10:30

(B) 10:55

(C) 11:30

(D) 12:00

(E) 12:05

14. Jason and Mary together have 96 stamps. If Jason has twice as many stamps as Mary, how many stamps does Mary have?

(A) 48

(B) 46

(C) 32

(D) 16

(E) 44

15. Predict which of the following calculations will give the correct answer for  $291 \div 24$ . (You don't need to do the calculations.)

(A)  $291 \div 20 + 291 \div 4$ (B)  $291 \div 8 + 291 \div 3$ (C)  $240 \div 8 + 51 \div 3$ (D)  $210 \div 24 + 81 \div 24$ (E)  $312 \div 24 - 21$ 

16. An ant walks once around the rectangular figure below, all along the lines. How far did the ant walk?

(A) 11 m

(B) 19 m

(C) 22 m

(D) 24 m

Not enough information  
(E) Nie genoeg inligting nie  
Ayonelanga inkcazelō

12. 'n Klok verloor 3 minute tyd per uur. Dit word reggestel om 13:00. Watter tyd sal die klok toon wanneer die korrekte tyd 10:00 die volgende dag is?

12. Iwotshi yathi yabekwa exesheni ngentsimbi yama 13:00. Kwiyure nganye ithi iphume exesheni ngemizuzu emi 3. Ingaba le wotshi iyakube isithi lingubani ixesha xa elona xesha lililo iyakube liyintsimbi ye 10:00 kusuku olulandelayo?

13. By skool A lui 'n klok elke half uur en by skool B lui 'n klok elke 35 minute. As die twee klokke gelyktydig om 08:00 lui, wanneer sal hulle weer gelyktydig lui?

13. Kwisikolo U A intsimbi ikhala qho emva kwesiqingatha se yure kwaye kwiskolo B intsimbi ikhala emva kwemizuzu engama 35. Ukuba zithi ezintsimbi zimbini zithi zikhale ngexesha elinye ngentsimbi yesi 08:00, ziyakukhala nini kwakhona ngexesha elinye?

14. Jason en Mary het saam 96 seëls. As Jason twee keer soveel seëls as Mary het, hoeveel seëls het Mary?

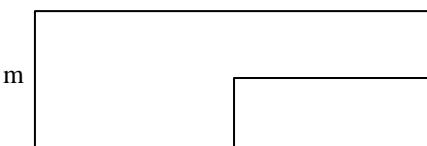
14. U Jason no Mary bebocabini banezitampu ezingama 96. Ukuba izitampu zika Jason ziziphindaphinda kabini ezika Mary, zingaphi izi tampus zika Mary?

15. Voorspel watter van die volgende berekenings sal die korrekte antwoord gee vir  $291 \div 24$ . (Jy hoef nie die berekenings te doen nie.)

15. Qashela ukuba ngeziphi izivakalisi ezifana nale  $291 \div 24$ . (Nokuba awuyisebenzisanga i-calculator).

16. 'n Mier stap al op die lyne, een keer om hierdie reghoekige figuur. Hoe ver het die mier gestap?

8 m



16. Imbovane ihamba iwujikeleza kanye lomzobo woxande ungezantsi, ilandela imigca ebhaliweyo. Ingaba lembovane yahamba umgama ongakanani?

17. Children are making cars from wire in the technology class. A car needs  $3\frac{1}{2}$  metres of wire to be made and they have 21 metres of wire. How many cars can they make?

(A) 10

(B) 6

18. Arnold drove 10 km east, then 5 km north, then 3 km east, then 11 km south, then 13 km west. How far is he now from his starting place?

(A) 11 km

(B) 6 km

19. 10 October this year, written as 10-10-01, was an interesting date, because it consists only of 0s and 1s. How many such dates are there this year?

(A) 3

(B) 4

20. What two-digit number satisfies all these conditions:  
Both of the digits are even.  
The tens-digit is greater than the ones-digit.  
The ones-digit is not a multiple of 3.  
The sum of the two digits is a multiple of 5.

(A) 28

(B) 87

21. A farmer makes a fence around his square garden. When it is completed there are 10 poles on each side. How many poles did he use altogether?

(A) 40

(B) 38

17. Die kinders is besig om draadkarretjies in die tegnologie klas te maak. Een karretjie benodig  $3\frac{1}{2}$  meter draad en hulle het altesaam 21 meter draad. Hoeveel karretjies kan hulle maak?

(C) 3

(D)  $6\frac{1}{2}$ 

(E) 8

18. Arnold reis 10 km oos, toe 5 km noord, toe 3 km oos, toe 11 km suid en daarna 13 km wes. Hoe ver is hy nou van waar hy begin het?

(C) 3 km

(D) 5 km

(E) 10 km

19. 10 Oktober vanjaar, geskryf as 10-10-01, was 'n interessante datum, want dit bestaan slegs uit 0e en 1e. Hoeveel sulke datums is daar vanjaar?

(C) 6

(D) 9

19. Umhla wama 10 ku Oktobha obhalwa ngolu hlobo 10-10-01, wawulusuku olunomdla kakhulu kuba libhalwe ngama 0 kunye ne 1. Zingaphi iintsuku ezibhalwa olu hlobo kulo nyaka?

(E) 12

20. Watter tweesyfer-getal voldoen aan al hierdie voorwaardes:

Albei syfers is ewe.

Die tiene-syfer is groter as die ene-syfer.

Die ene-syfer is nie 'n veelvoud van 3 nie.

Die som van die twee syfers is 'n veelvoud van 5.

20. Leliphi inani eline dijithi ezimbini elithi liyizalisekise yonke le miqathango?

Zombini idijithi zeli nani zohluleka ngesibini.

Idijithi esemashumini inkulu kune dijithi ekwindawo yemivo.

Idijithi ekwindawo yemivo ayohluleki ngesi 3.

Idijithi zombini xa zidityanisweyo zikhupha isiphumo esohluleka ngesi 5.

(C) 46

(D) 86

(E) 64

21. 'n Boer maak 'n heining om sy vierkantige tuin. Na voltooiing is daar 10 heining-pale aan elke kant. Hoeveel pale het hy altesaam gebruik?

(C) 36

(D) 34

21. Umfama ubiya ngocingo kwigadi yakhe esisikwere. Xa eyiggibile kubakho ii pali ezi 10 kwicala ngalinye. Zingaphi ii pali azisebenzisileyo zizonke?

(E) 20

22. Which fraction is between  $\frac{1}{4}$  and  $\frac{1}{5}$ ?

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

(B)  $\frac{9}{40}$

23. You want to use Maggie's recipe below to bake some milktarts. How many cups of milk do you need to bake 8 milktarts?

**MAGGIE'S MILKTART**  
*(Makes 6 milktarts)*

8 cups of milk  
4 cups of sugar  
 $2\frac{1}{2}$  cups of flour  
3 table spoons butter  
9 eggs  
 $1\frac{1}{4}$  teaspoons salt

22. Watter breuk is tussen  $\frac{1}{4}$  and  $\frac{1}{5}$ ?

(C)  $\frac{3}{20}$

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

22. Leliphi iqhezu eliphakathi kwe  $\frac{1}{4}$  kunye ne  $\frac{1}{5}$ ?

(E)  $\frac{19}{100}$

23. Jy wil melktert bak met Maggie se resep hieronder. Hoeveel koppies melk het jy nodig om 8 melkterte te bak?

**MAGGIE SE MELKTERT**  
*(Makes 6 milktarts)*

8 cups of milk  
4 cups of sugar  
 $2\frac{1}{2}$  cups of flour  
3 table spoons butter  
9 eggs  
 $1\frac{1}{4}$  teaspoons salt

(A)  $8\frac{1}{3}$

(B)  $10\frac{2}{3}$

(C)  $10\frac{1}{3}$

(D)  $10\frac{1}{2}$

(E) 10

24. In the previous question: If you only have 15 eggs (and enough of all the other ingredients), how many milktarts can you bake using Maggie's recipe?

(A) 8

(B) 9

(C) 10

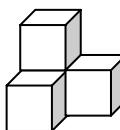
(D) 11

(E) 12

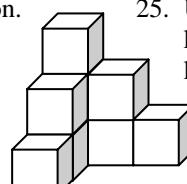
25. Thandi builds a pattern of cubes as shown. How many cubes will there be in Pattern 20?



Pattern/Patroon/Uluhlu 1



Pattern/Patroon/Uluhlu 2



Pattern/ Patroon/Uluhlu 3

(A) 312

(B) 400

(C) 412

(D) 441

(E) 402

23. Ufuna ukusebenzisa le ndlela yokupheka ebizwa ngokuba yi recipe kaMaggie.ebhalwe ngezantsi ukuze ubhake izimungumenye zobisi ezibizwa ngokuba zii milktarts. Ingaba zingaphi iikomityi zobisi ozifunayo ukubhaka ii milktarts ezi 8?

**MAGGIE'S MILKTART**  
*(Yenza ii milktarts ezi 6)*

Isi 8 sekomityi zobisi  
Isi 4 sekomityi zeswekile  
Isi  $2\frac{1}{2}$  sekomityi zomgubo  
Isi 3 samacephe ebhotolo  
Isi 9 samaqanda  
Isi  $1\frac{1}{4}$  se tispuni zetyuwa

24. In die vorige vraag: As jy net 15 eiers het (maar genoeg van die ander bestanddele), hoeveel melkterte kan jy bak met Maggie se resep?

24. Jonga umbuzo ongentla.: Ukuba unamaqanda ali 15 kuphela (kodwa unazo zonke ezinye izityo ngokupheleleyo), zingaphi iimilktarts onokuzibhaka usebenzisa le recipe ka Maggie?

25. Uthathe wakha uluhlu lweetyubhu njengoba kubonisiwe. Ingaba zingaphi iityubhu ezingaku kuluhlu lwama 20?