

# Mathematics Challenge

GRADE 4 FINAL ROUND  
16 OCTOBER 2002

## NOTE:

- Answer the questions according to the instructions on the answer sheet.
- You may use a calculator.
- The questions test insight. Complex calculations are therefore unnecessary and time consuming.
- We hope you enjoy it!

1. Eight cubes are put together to build this T-shaped figure. The outside of the figure is completely painted. The eight cubes are then separated again. How many of the cubes now have exactly 4 painted faces?

(A) 2

(B) 3

(C) 4

(D) 5

(E) 6

2. A movie on television is 2 hours 55 minutes long and ends at 16:45. At what time did it start?

(A) 14:50

(B) 14:10

(C) 13:50

(D) 13:10

(E) 14:25



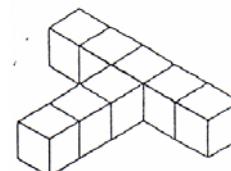
In cooperation with the  
**Western Cape Education Department**  
**Gauteng Education Department**

# Wiskunde-uitdaging

GRAAD 4 FINALE RONDE  
16 OKTOBER 2002

## 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!



1. Agt blokkies word gebruik om hierdie T-vorm te bou. Die buitekant van die vorm word daarna geverf. Die agt blokkies word dan weer losgemaak. Hoeveel van die blokkies het nou presies 4 geverfde kante?

# Umceli-mnjeni Ngezibalo

GRADE 4 UMJIKELO WOKUGQIBELA  
16 OKTHOBHA 2002

## QAPHELA:

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

1. Iityubhu ezsibhozo zibekwe zonke ukukwa lomfanekiso wonobumba u T. Umphandle wesi sajkhizo uwonke wathi waqatywa ngepeyinti. Zaphindwa zohlulwa kwakhona ezi tyhubhu zisisibhozo. Zingaphi kwezityhubhu ezinamacala amane obuso apeyintiwego?

2. Umboniso bhanya-bhanya we Television uthatha iyure ezi 2 nemizuzu eyi-55 kwaye uphela ngentsimbi ye 16:45 . Ingaba ugale nini?

## Nasou Via Afrika



CASIO

RUMEUS

Research Unit for Mathematics Education  
of the University of Stellenbosch

3. A watch gains 30 seconds every six hours. How many minutes will it gain in a week?

(A) 10

(B) 2



3

'n Horlosie wen 30 sekondes elke ses uur.  
Hoeveel minute sal dit in 'n week wen?

(D) 14

(C) 7



3

Iwotshi ithi ibe phambili ngemizuwana engama 30 rhoqa emva kweeyure ezi 6. Mingaphi imizuzu ezakubaphambili ngayo emva kweveki enye?

(E) 21

4. Brad and Sizwe caught a total of 15 fish. Brad caught one more than Sizwe. How many fish did Sizwe catch?

(A) 7

(B) 8

4. Brad en Sizwe het altesaam 15 visse gevang. Brad het een meer as Sizwe gevang. Hoeveel visse het Sizwe gevang?

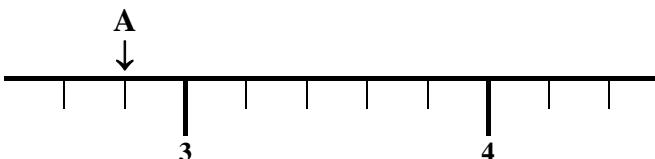
(C) 16

(D) 15

4. U Brad no Sizwe bebocabini babamba iintlanzi ezili 15. Ubred wabambisi yanye okwedlula kwezabanjiswa nguSizwe. Ziingaphi iintlanzi ezabanjiswa ngu Sizwe?

(E) 14

5. What is the number indicated by A on the ruler?



(A) 2,9

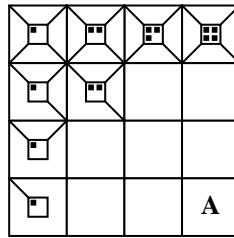
(B) 2,8

(C) 2,95

(D) 2,6

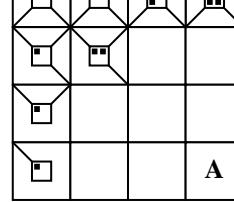
(E) 2

6. Which picture belongs at A?

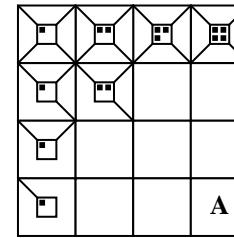


(A)

(B)



(C)



(E)

7. Zinkle has 15 marbles less than Zuki. Together they have 95 marbles. How many marbles does Zuki have?

(A) 80

(B) 40

7. Zinkle het 15 albasters minder as Zuki. Saam het hulle 95 albasters. Hoeveel albasters het Zuki?

(C) 55

(D) 50

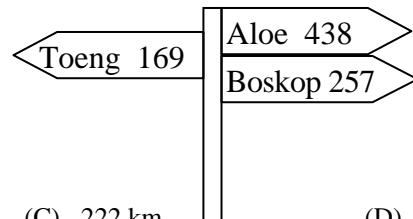
7. U Zinkle unamapetyu angama 15 ukodlula u Zuki. Bebobabini banamapetyu angama 95. Mangaphi amapetyu kaZuki?

(E) 110

8. This road sign at a T-junction shows the distance, in kilometres, to three towns. What is the distance between Aloe and Boskop?

(A) 607 km

(B) 181 km



(C) 222 km

(D) 269 km

(E) 665 km

9. In the previous question: What is the distance between Aloe and Toeng?

(A) 607 km

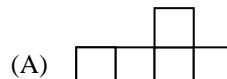
(B) 181 km

10. Thabo and Peter buy a case of cooldrinks and pay R30 for it. Thabo takes 4 bottles and Peter takes the other 8. How much must Thabo pay for his share?

(A) R12

(B) R9

11. What will you see if you look at this block building *directly* from behind?



12. What is the next number in this pattern?

6,8; 3,4; 1,7; ...

(A) 0,85

(B) 8,5

(C) 1,35

(D) 0,9

(E) 0,535

8. Hierdie padteken by 'n T-aansluiting gee die afstande, in kilometer, na drie dorpe. Wat is die afstand tussen Aloe en Boskop?

8. Lo mfanekiso wendlela ofumaneka ekudibaneni kwemigaqo emibini efanisa nonobumba u T ibonisa imigama, ngokwe khilomitha, ukuya kwiidolophu ezintathu. Ingaba umgama ophakathi kwe Aloe ne Boskap mngakanani?

- (C) 222 km  
(D) 269 km  
(E) 665 km
9. In die vorige vraag: Wat is die afstand tussen Aloe en Toeng?  
(A) 607 km  
(B) 181 km

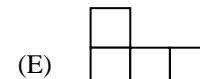
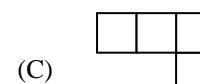
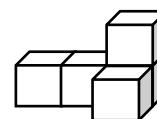
10. Thabo en Peter koop 'n kis koeldrank wat 12 bottels bevat en betaal R30 daarvoor. Thabo neem 4 bottels en Peter neem die ander 8. Hoeveel moet Thabo vir sy aandeel betaal?

- (C) R15  
(D) R8  
(E) R10

9. Ngokombuzo ongentla: Mgakanani umgama ophakathi kwe Aloe ne Toeng?  
(A) 607 km  
(B) 181 km

10. UThabo no-Peter bathenge ikasi yesisel esibandayo 2 baza babhatala ama R30. U Thabo uthat is 4 seebhotile waza u Peter yena wathatha is 8 seebhotile. Ingaba kufuneka u Thabo ehlawule malini ngesabelo sakhe?

11. Ungabona ntoni ukuba unokusijongela ngqo ngasemva esi sahiwo sebloko?



12. Wat is die volgende getal in hierdie getalpatroon?

6,8; 3,4; 1,7; ...

12. Leliphi inani elilandela lamanani kolu luhlu lwamani?  
6,8; 3,4; 1,7; ...

(E) 0,535

13. The sketch shows how houses are numbered in Albury Street.

Coroline lives at number 36  
Con lives at number 37  
Luke lives at number 38  
Maria lives at number 39  
Angelo lives at number 40  
Marc lives at number 42

Who lives opposite Luke?

(A) Caroline

(B) Con

14. Delshe has 24 marbles more than Bingo and Therine has 24 less than Bingo. If Bingo has 71 marbles, how many do they have altogether?

(A) 211

(B) 213

15. A shop sells potatoes in big bags with 40 potatoes for R35,60. If they want to sell smaller bags of 15 potatoes for the same price, what should the price of the smaller bag be?

(A) R10,68

(B) R13,35

16. If you begin with a one-digit number, multiply it by 3, then add 8, then divide by 2 and then subtract 6, you will get the original number back. What is the number?

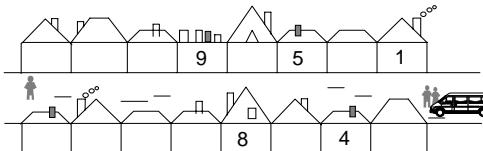
(A) 2

(B) 8

13. Die skets toon hoe huise in Alburystraat genommer word.

Caroline woon in nommer 36  
Con woon in nommer 37  
Luke woon in nommer 38  
Maria woon in nommer 39  
Angelo woon in nommer 40  
Marc woon in nommer 42

Wie woon direk oorkant Luke?



(C) Maria

(D) Angelo

(E) Marc

14. Delshe het 24 albasters meer as Bingo en Therine het 24 minder as Bingo. As Bingo 71 albasters het, hoeveel het hulle altesaam?

(C) 215

(D) 217

14. UDelshe unamabastile angama-24 ngaphezu kunaka Bingo yena uTherine unama-24 ngaphantsi kunaka Bingo. Ukuba uBingo unama-71 amabastile, mangapi ewonke amabastile abanawo?

(E) 219

15. 'n Winkel verkoop groot sakke met 40 aartappels vir R35,60. As hulle kleiner sakkies met 15 aartappels teen dieselfde prys wil verkoop, wat moet die prys van die kleiner sakkie wees?

(C) R17,80

(D) R16,40

15. Ivenkile ithengise iitapile ngezingxobo ezinkulu ezifakwe iitapile ezingama 40 kwisingxobo ngasinye ngama R35,60. Ukuba bafuna ukuthengisa izingxotyana ezincinci ezinetapile ezili 15 ngexabiso elifanayo, isingxotyana ngasinye esincinane siya kuxabisa malini?

(E) R15,65

16. As jy begin met 'n eensyfergetal, dit vermening-vuldig met 3, dan 8 bytel, dan deel deur 2 en dan 6 aftrek, sal jy die oorspronklike getal kry. Wat is die getal?

(C) 6

(D) 5

16. Ukuba uqalela ngenani elinedijiti enye, liphindaphinde nge 3, uze udibanise isi 8, wandule ukohlula ngesi 2 emva koko uthabathe isithandathu uyakuthi ufumane isiphumo esifana kwanelanani obuqale ngalo. Ingaba lingubani eli nani?

(E) 4

17. Belinda uses  $\frac{3}{4}$  of a metre of material to make a skirt. If she has 5 m of material, how many skirts can she make?

(A) 7

(B) 6

17. Belinda gebruik 'n  $\frac{3}{4}$  meter material om 'n rok te maak. As sy 5 m material het, hoeveel rokke kan sy maak?

(C)  $6\frac{2}{3}$ (D)  $3\frac{3}{4}$ 

17. U Belinda usebenzisa isi  $\frac{3}{4}$  semitha selaphu ukuthunga isiketi. Ukuba unelaphu elizimitha ezi 5, zingaphi iziketzi anokuzithunga?

None of these

(E) Nie een hiervan nie

Ayiko kwezi

18. A packet of viennas is shared equally amongst 15 children. If each child got  $2\frac{1}{5}$  viennas, how many viennas were in the packet?

(A) 33

(B) 35

18. 'n Pakkie worsies word gelykop tussen 15 kinders verdeel. As elke kind  $2\frac{1}{5}$  worsies kry, hoeveel worsies was daar in die pakkie?

(C) 30

(D) 30

18. Iipakethe ye vienna yohlulelw abantwana abali 15 ngokulinganayo. Ukuba umntwana ngamnye wafumana isi  $2\frac{1}{5}$  se vienna, zazingaphi iivienna ezazikwpakethe leyo?

Nie een hiervan nie

(E) None of these

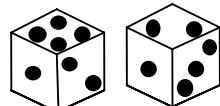
Ayiko kwezi

19. What is the smallest even number which *cannot* be obtained when the scores on top of two dice are multiplied together?

(A) 14

(B) 10

19. Wat is die kleinste ewe getal wat *nie* verkry kan word as die getalle bo-op twee dobbelstene vermenigvuldig word nie?



(C) 18

(D) 8

19. Leliphi elona nani lincinane elingengomqakathi elingenakufunyanwa xa izikoro kumadayisi amabini zithe zaphindaphindwa?

(E) 16

20. If you roll two dice and add the two scores, how many different answers are possible?

(A) 10

(B) 11

20. As jy twee dobbelstene rol en jy tel die twee getalle op, hoeveel verskillende antwoorde is moontlik?

(C) 12

(D) 21

20. Ukuba udovola amadayisi uze izikoro zozibini uzidibanise zingangaphi iziphumo zokokudibanisa kwakho onokuzifumana?

(E) 36

21. Siva is shorter than Temba. Eby is taller than Ram and Temba. Siva is also shorter than Ram but taller than Oscar. Who is the shortest of them all?

(A) Oscar

(B) Siva

21. Siva is korter as Temba. Eby is langer as Ram en Temba. Siva is ook korter as Ram, maar langer as Oscar. Wie is die kortste van almal?

(C) Temba

(D) Ram

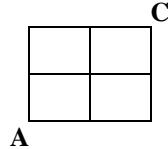
21. U Siva mfutshane kuno Themba. U Eby yena mde kuno Themba kwakunye no Ram. U Siva mfutshane kuno Ram kodwa emde kuno Oscar. Ngowuphi ongoyena mfutshane kubo bonke?

(E) Eby

22. The figure below is built with 4 squares, each with a side length of 1 cm. If I follow the lines, the shortest distance from A to C is 4 cm. How many different 4 cm routes are there from A to C?

(A) 1

(B) 4



(C) 5

(D) 6

(E) 3

23. Five children play tennis. Each child plays each of the others once. How many matches are played?

(A) 20

(B) 12

23. Vyf kinders speel tennis. Elke kind speel een keer teen elkeen van die ander. Hoeveel wedstryde word gespeel?

(C) 6

(D) 10

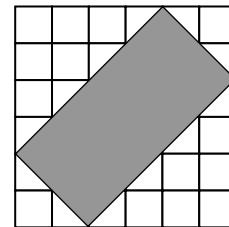
23. Abantwana abahlanu badlala intenetya. Umntwana ngamnye udlala nomnye kanye. Mingaphi imidlalo edlaliweyo?

(E) 15

24. The sketch shows a carpet on a tile floor. What fraction of the floor is *not* covered by the carpet?

(A)  $\frac{16}{36}$

(B)  $\frac{5}{9}$



(C)  $\frac{11}{36}$

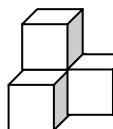
(D)  $\frac{22}{30}$

(E)  $\frac{22}{36}$

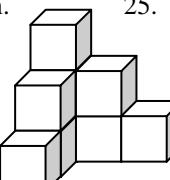
25. Thandi builds a pattern of cubes as shown. How many cubes will there be in Pattern 20?



Pattern/Patroon/Uluhlu 1



Pattern/Patroon/Uluhlu 2



Pattern/ Patroon/Uluhlu 3

(A) 312

(B) 400

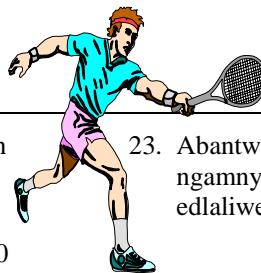
(C) 412

(D) 441

(E) 402

25. Thandi bou patrone met kubusse soos getoon. Hoeveel kubusse sal in Patroon 20 wees?

22. Lo mzobo ungezantsi wenziwe ezi 4, sinye sinobude becala obusi 1cm. Ukuba ndithi ndihambe ndilandela imigca, owona mgama mfunshane ukusuka ku A ukuya ku C usi 4 cm. Zingaphi iindlela ezahlukeneyo ezinokuhanjwa ukusuka ku A ukuya ku C?



23. Abantwana abahlanu badlala intenetya. Umntwana ngamnye udlala nomnye kanye. Mingaphi imidlalo edlaliweyo?

24. Lo mzobo ubonisa ikhaphethi ekumgangatho wetayile. Ingaba liqhezu elingakanani lalo mgangatho elingogqunywanga ngale khaphethi?