

# Mathematics Challenge

GRADE 5 FIRST ROUND  
10 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!

# Wiskunde-uitdaging

GRAAD 5 EERSTE RONDE  
10 OKTOBER 2001

## 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 WOKUQALA  
10 OKTHOBHA 2001

## QAPHELA:

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

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1. Which of these numbers is closest to 8?

- (A) 7,93                      (B) 8,08

1. Watter van hierdie getalle is die naaste aan 8?

- (C) 7,8                      (D) 8,1

1. Leliphi elona lisondele ku 8?

- (E) 7,9

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2. What number is halfway between 234469 and 234562?

- (A) 234515,5              (B) 234515

2. Watter getal is halfpad tussen 234469 en 234562?

- (C) 234516              (D) 93

2. Leliphi inani elisembindini phakathi ko 234469 no 234562?

- (E) 46,5
- 



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

Nasou Via Afrika



**CASIO**

**RUMEUS**

Research Unit for Mathematics Education  
of the University of Stellenbosch

3. Which number in place of  $\Delta$  will make this number sentence true?

$$14 \times \Delta = 280$$

- (A) 2 (B) 10

3. Watter getal in die plek van  $\Delta$  sal hierdie getallesin waar maak?

$$14 \times \Delta = 280$$

- (C) 20 (D) 7

3. Leliphi inani endaweni ye  $\Delta$ , ekufanele lenze esi sivakalisi sibe yinyani?

$$14 \times \Delta = 280$$

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

4. Which number in place of  $\Delta$  will make this number sentence true?

$$\Delta \times \Delta \times \Delta = 729$$

- (A) 243 (B) 6

4. Watter getal in die plek van  $\Delta$  sal hierdie getallesin waar maak?

$$\Delta \times \Delta \times \Delta = 729$$

- (C) 7 (D) 9

4. Leliphi inani endaweni ye  $\Delta$ , ekufanele lenze esi sivakalisi sibe yinyani?

$$\Delta \times \Delta \times \Delta = 729$$

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

5. The basket with the apples in it is 0,5 m high. About how high is the tree?

5. Die mandjie met die appels daarin is 0,5 m hoog. Omtrent hoe hoog is die boom?



- (A) 2 m (B) 3 m (C) 5 m (D) 6 m (E) 7 m

6. Susie has 25 less marbles than Sam. Together they have 105 marbles. How many marbles does Sam have?

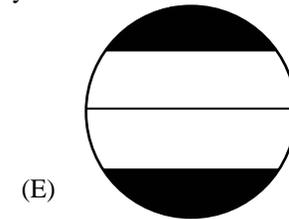
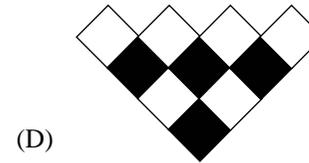
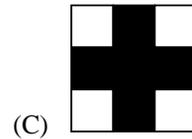
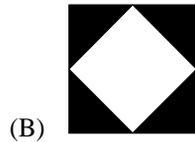
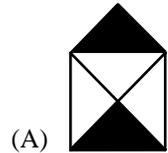
6. Susie het 25 albasters minder as Sam. Saam het hulle 105 albasters. Hoeveel albasters het Sam?

6. U Susie unamabhastile angama 25 ngaphantsi kwaka Sam. Amabhastile abo bebobabini ali 105. Mangaphi amabhastile ka Sam?

- (A) 80 (B) 65 (C) 50 (D) 40

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

7. In which one of the following is half of the figure shaded?



7. In watter een van die volgende is die helfte van die figuur verdonker?

7. Ngowuphi kule mifanekiso osiqingatha sawo sikhuhliweyo?

8. It takes Mlamli 20 minutes to cycle to school. He wants to be at school on Saturday morning 15 minutes before a soccer match which begins at 08:30. When must he set out?

(A) 08:10

(B) 07:55

8. Dit neem Mlamli 20 minute om per fiets skool toe te ry. Hy wil Saterdagoggend 15 minute voor 'n sokkerwedstryd, wat om 08:30 begin, by die skool wees. Hoe laat moet hy vertrek?

(C) 08:25

(D) 08:50

8. U Mlamli uthatha imizuzu eyi-20 ukuya esikolweni ngebhayisekile. Ngentsasa yoMgqibelo ufuna ukufika esikolweni imizuzu eyi-15 phambi kokuba umdlalo webhola yesoka uqale. Umdlalo uqala ngo-08-30. Kufuneka ehambe nini?

(E) 08:00

9. Thabo 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

9. Thabo 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

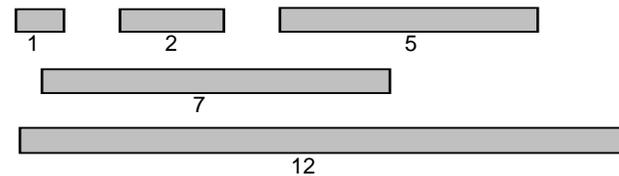
9. U Thabo i 10 km ukuya empuma, waze waqhuba i 5 km ukuya emantla, waze waqhuba i 3 km ukuya empuma, waze waqhuba i 11 km ukuya emazantsi, waze waqhuba i 13 km ukuya entshona. Ingaba ukude kangakanani ngoku ukusukela apho aqale khona?

(E) 10 km

10. Here are five miniature "railway trucks", with lengths as indicated. These trucks can be used to make miniature trains of different lengths. Using these five trucks, which of the following lengths of train *cannot* be made?

(A) 6

(B) 10



(C) 24

(D) 16

10. Apha ngamatrokwana kaloliwe amahlanu anobude obubonakalisiweyo. La matrokwana angasetyenziswa ekwenzeni ololiwe abancinane abanobude obahlukeneyo. Ngokusetyenziswa kwala matrokwana mahlanu bobuphi kubude obulandelayo bukaloliwe obungenakwenziwa?

(E) 15

11. A computer has a secret rule. For every input number that you type in, it produces an output number using that same rule. Here are some examples of the computer's answers. If the input number was 6, what would the output number be?

11. 'n Rekenaar gebruik 'n geheime formule om 'n uitvoergetal te bereken vir elke invoergetal. Die tabel toon sulke invoer-uitvoer pare. As die invoergetal 6 is, wat sal die rekenaar se uitvoergetal wees?

<b>Input number</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Output number</b>	<b>2</b>	<b>7</b>	<b>12</b>	<b>17</b>

11. I computer inomgaqo olihlebo. Ngenani ngalinye olifakayo kuyo ikhupa elinye inani isebenzisa lo mgaqo ulihlebo. Nantsi eminye imizekelo yamanani akhutshwayo kwi computer ibonisiwe kuletafile yamanani. Ukuba ngokwaletafile yalo mgaqo ulihlebo le computer kufakwe inani ama 6, inani elikhutshwayo liyakuba ngubani?

(A) 20

(B) 22

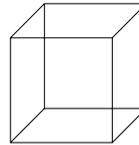
(C) 32

(D) 34

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

12. What is the smallest number of colours needed to paint the six sides of a block in such a way that sides which touch are not painted the same colour?

12. Wat is die kleinste getal kleure wat nodig is om die ses sye van 'n blokkie te verf sodat sye wat aan mekaar raak nie dieselfde kleur het nie?



12. Zingaphi ezona ndlela zimbilwa zokudyobha ngepeyinti ibhokisi emacala mathandathu, kangangokuba amacala adyojwe ngombala omnye angadityaniswa?

(A) 6

(B) 3

(C) 5

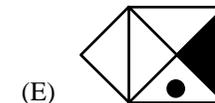
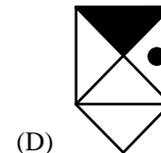
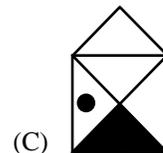
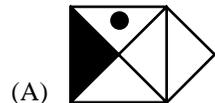
(D) 2

(E) 4

13. A figure is turned (but not flipped over) and shown below in different positions. Which figure is different?

13. 'n Figuur word gedraai (maar nie omgekeer nie) en hieronder in verskillende posisies getoon. Watter figuur is anders?

13. Umfanekiso uguqu-guqulwe indlela ngeendlela. Ngowuphi umfanekiso uwahlukileyo kule?



14. Nora walks  $\frac{2}{3}$  km in 20 minutes. If she keeps walking at this speed, how far does she walk in  $1\frac{1}{2}$  hours?

14. Nora loop  $\frac{2}{3}$  km in 20 minute. As sy aanhou om teen hierdie spoed te loop, hoe ver sal sy in  $1\frac{1}{2}$  uur loop?

14. U Nora uhambe isi  $\frac{2}{3}$  km kwimizuzu engama 20. Ukuba uqhubeka ehamba ngesisisantya, uyakuhamba umgama ongakanani emva kweyure e  $1\frac{1}{2}$ ?

(A) 3 km

(B) 30 km

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

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

(E)  $2\frac{2}{3}$  km



- | <p>20. Bradford drinks <math>\frac{1}{2}</math> of a jug of milk in the fridge. His sister drinks <math>\frac{1}{3}</math> of the left over milk. What fraction of the original jug of milk is now left over?</p> <p>(A) <math>\frac{1}{6}</math>                      (B) <math>\frac{2}{5}</math></p>   | <p>20. Bradford drink <math>\frac{1}{2}</math> van 'n beker melk in die yskas. Sy suster drink <math>\frac{1}{3}</math> van die oorblywende melk. Watter breuk van die oorspronklike beker melk is nou oor?</p> <p>(C) <math>\frac{1}{5}</math>                      (D) <math>\frac{1}{3}</math></p> | <p>20. U Bradford usela isi <math>\frac{1}{2}</math> sejoko(jug) yobisi olukwisikhenkcezisi. Udade wabo yena usela isi <math>\frac{1}{3}</math> sobisi olushiywe ngumntakwabo. Ingaba luliqhezu elingakanani ubisi oluseleyo ke ngoku?</p> <p>(E) <math>\frac{5}{6}</math></p> |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
|---|---|--|---|---|---|---|----------|----------|---|---|--|-----|------|---|---|---|---|----------|----------|---|---|---|-----|------|---|---|---|---|----------|----------|---|---|
| <p>21. In 10 year's time the combined age of 3 sisters will be 100. What is their combined age now?</p> <p>(A) 90                      (B) 80</p>   | <p>21. Oor 10 jaar sal die gesamentlike ouderdom van 3 susters 100 wees. Wat is hulle gesamentlike ouderdom nou?</p> <p>(C) 70                      (D) 60</p>  | <p>21. Kwiminyaka eli 10 ezayo isiphumo seminyaka yobudala sodade aba 3 siyakuba li 100. Ingaba isiphumo seminyaka yabo yobudala singakanani namhlanje?</p> <p>(E) 50</p>  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| <p>22. 5 ; 9 ; 13 ; 17 ; 21 ; ...<br/>If the pattern is continued, which of these numbers will appear?</p> <p>(A) 6152                      (B) 4065</p>  | <p>22. 5 ; 9 ; 13 ; 17 ; 21 ; ...<br/>Watter van hierdie getalle sal voorkom as die patroon voortgesit word?</p> <p>(C) 9135                      (D) 3028</p>  | <p>22. 5 ; 9 ; 13 ; 17 ; 21 ; ...<br/>Ukuba olu luhlu longeziwe, ngeliphi elinye inani elinokuvela?</p> <p>(E) 3336</p>  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| <p>23. Refer to question 22. What will be the 71st number in the pattern?</p> <p>(A) 354                      (B) 283</p>   | <p>23. Verwys na vraag 22. Wat sal die 71ste getal in die patroon wees?</p> <p>(C) 285                      (D) 238</p>   | <p>23. Ngokombuzo 22. Ngeliphi inani le-71 elinokuvela?</p> <p>(E) 289</p>   |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| <p>24. The three digits of a three-digit number add up to 25. How many such three-digit numbers are there?</p> <p>(A) 2                      (B) 4</p>  | <p>24. Die som van die drie syfers van 'n driesyfergetal is 25. Hoeveel sulke driesyfergetalle is daar?</p> <p>(C) 6                      (D) 8</p>   | <p>24. Ii dijithi zenani eline dijithi ezintathu ziba ngama 25 xa zidityanisiwe. Mangaphi amanani anjalo ane dijithi ezintathu anokwenzeka?</p> <p>(E) 10</p>  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| <p>25. The following shows an addition of space money. Instead of Rand and Cents, they use Tog and Pues:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">Tog</th> <th style="text-align: left;">Pues</th> </tr> </thead> <tbody> <tr> <td style="text-align: right;">2</td> <td style="text-align: right;">4</td> </tr> <tr> <td style="text-align: right;">1</td> <td style="text-align: right;">5</td> </tr> <tr> <td style="text-align: right;"><u>3</u></td> <td style="text-align: right;"><u>4</u></td> </tr> <tr> <td style="text-align: right;">8</td> <td style="text-align: right;">1</td> </tr> </tbody> </table> <p>How many Pues in a Tog?</p> <p>(A) 3                      (B) 4</p> | Tog   | Pues   | 2 | 4 | 1 | 5 | <u>3</u> | <u>4</u> | 8 | 1 | <p>25. Hier volg 'n optelling in ruimtegeld. In plaas van Rand en Sent gebruik hulle Tog en Pues:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">Tog</th> <th style="text-align: left;">Pues</th> </tr> </thead> <tbody> <tr> <td style="text-align: right;">2</td> <td style="text-align: right;">4</td> </tr> <tr> <td style="text-align: right;">1</td> <td style="text-align: right;">5</td> </tr> <tr> <td style="text-align: right;"><u>3</u></td> <td style="text-align: right;"><u>4</u></td> </tr> <tr> <td style="text-align: right;">8</td> <td style="text-align: right;">1</td> </tr> </tbody> </table> <p>Hoeveel Pues is daar in 'n Tog?</p> <p>(C) 5                      (D) 6</p> | Tog | Pues | 2 | 4 | 1 | 5 | <u>3</u> | <u>4</u> | 8 | 1 | <p>25. Imali yasemajuku-jukwini ibizwa ngokuba zii Togs nee Pues, hayi iiRandi neesenti:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;">Tog</th> <th style="text-align: left;">Pues</th> </tr> </thead> <tbody> <tr> <td style="text-align: right;">2</td> <td style="text-align: right;">4</td> </tr> <tr> <td style="text-align: right;">1</td> <td style="text-align: right;">5</td> </tr> <tr> <td style="text-align: right;"><u>3</u></td> <td style="text-align: right;"><u>4</u></td> </tr> <tr> <td style="text-align: right;">8</td> <td style="text-align: right;">1</td> </tr> </tbody> </table> <p>Zingaphi iiPues kwiTog enye?</p> <p>(E) 7</p> | Tog | Pues | 2 | 4 | 1 | 5 | <u>3</u> | <u>4</u> | 8 | 1 |
| Tog   | Pues  |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| 2   | 4   |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| 1   | 5   |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| <u>3</u>  | <u>4</u>  |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| 8   | 1   |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| Tog   | Pues  |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| 2   | 4   |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| 1   | 5   |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| <u>3</u>  | <u>4</u>  |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| 8   | 1   |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| Tog   | Pues  |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| 2   | 4   |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| 1   | 5   |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| <u>3</u>  | <u>4</u>  |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |
| 8   | 1   |  |   |   |   |   |          |          |   |   |  |     |      |   |   |   |   |          |          |   |   |   |     |      |   |   |   |   |          |          |   |   |