Mathematics Challenge

GRADE 5 FIRST ROUND
6-10 SEPTEMBER 2004

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
6-10 SEPTEMBER 2004

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
6-10 SEPTEMBHA 2004

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

Western Cape
Wes-Kaap
Ntshona-Koloni
AMESA
The Association for Mathematics Education of South Africa

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. Which number in place of **Δ** makes this number sentence true?

$$14 \times \Delta = 280$$

(A) 2 (B) 10 (C) 20 (D) 7 (E) None of these

3. Watter getal in die plek van **Δ** maak hierdie getallesin waar?

$$14 \times \Delta = 280$$

(A) 2 (B) 10 (C) 20 (D) 7 (E) Nie een hiervan nie

3. Leliphi inani endaweni ye **Δ**, ekufanele lenze esi sivakalisi sibe yinyani?

$$14 \times \Delta = 280$$

(A) 2 (B) 10 (C) 20 (D) 7 (E) Ayiko kwezi

4. Which number in place of **Δ** makes this number sentence true?

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

(A) 243 (B) 6 (C) 7 (D) 9 (E) None of these

4. Watter getal in die plek van **Δ** maak hierdie getallesin waar?

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

(A) 243 (B) 6 (C) 7 (D) 9 (E) Nie een hiervan nie

4. Leliphi inani endaweni ye **Δ**, ekufanele lenze esi sivakalisi sibe yinyani?

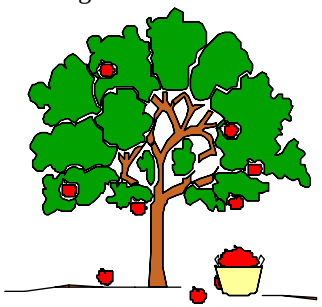
$$\Delta \times \Delta \times \Delta = 729$$

(A) 243 (B) 6 (C) 7 (D) 9 (E) Ayiko kwezi

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

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

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

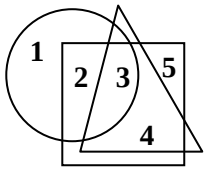
5. Le ngobozi inama apile inomphakamo osisi 0,5 m. Ingaba umphakamo walo mthi ungakanani?

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

6. Which number is in the square and the circle but is not in the triangle?

(A) 1 (B) 2 (C) 3 (D) 4 (E) 5

6. Watter getal is in die vierkant en die sirkel, maar nie in die driehoek nie?



(A) 1 (B) 2 (C) 3 (D) 4 (E) 5

6. Leliphi inani elikwisikwere nakwi sangqa kodwa lingekho kunxantathu?

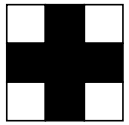
(A) 1 (B) 2 (C) 3 (D) 4 (E) 5

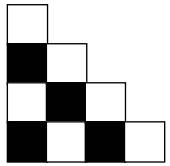
7. In which one of the following is *half* of the figure shaded?

(A) 

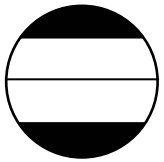
(B) 

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

(C) 

(D) 

7. Ngowuphi kule mifanekiso osiqingatha sawo sikhuhliweyo?

(E) 

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 skooltoe 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. UMlamli 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

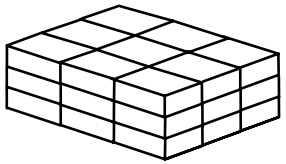
9. U Thabo i 10 km ukuya empuma,waze waqhuba i 5 km ukuya emantla ,waze waqhuba i 3 km ukuya empuma, waze waqhuba i 11 km ukuya emazantsi , waze waqhuba i 13 km ukuya entshona. Ingaba ukude kangakanani ngoku ukusukela apho aqale khona?

(E) 10 km

10. 27 identical white blocks are stacked together to form a large block as shown in the below. All six faces of the large block are then painted red. If the large block is taken apart again, how many of the 27 small blocks have six white faces?

(A) 0 (B) 1

10. 27 identiese wit blokkies word gestapel om ’n groot blok te vorm soos hieronder getoon. Al ses kante van die groot blok word dan rooi geverf. As die groot blok weer uitmekaar gehaal word, hoeveel van die 27 blokkies het ses wit kante?



(C) 3 (D) 4

10. Iibloko ezifanayo ezingama 27 ziqatywe mhlophe zaze zapakishwa ndawonye ukwenza ibloko enkulu njengokuba kuboniswe kulo mzobo. Onke amacala amathandathu ebloko enkulu aqatywe bomvu. Ukuba ithe ibloko enkulu yachithachithwa , zingaphi kwezi zingama 27 zokuqala ezisenamacala aqatywe mhlophe?

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

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?

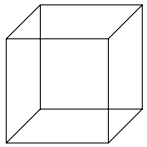
Input number	**0**	**1**	**2**	**3**
Output number	**2**	**7**	**12**	**17**

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 faces of a block in such a way that faces which touch are not painted the same colour?

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



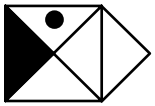
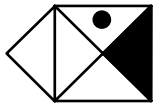
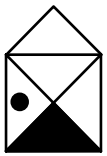
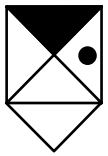
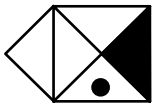
12. Zingaphi ezona ndlela zimbalwa zokudyobha ngepeyinti ibhokisi emacala mathandathu, kangangokuba amacala adyojwe ngombala omnye angadityaniswa?

(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?

(A)  (B)  (C)  (D)  (E) 

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 uqhubekeka 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

15. 40 children were asked whether they liked chocolate. 4 children have no opinion. The rest are divided into 2 equal groups of which the one group likes chocolate and the other group does not like chocolate. How many children like chocolate?

(A) 26 (B) 20 (C) 18 (D) 11

15. 40 kinders is gevra of hulle van sjokolade hou. 4 kinders het geen opinie nie. Die res is verdeel in 2 gelyke groepe waarvan die een groep van sjokolade hou en die ander groep nie. Hoeveel kinders hou van sjokolade?

15. Bayi-40 abantwana abasegumbini lokufundela. Abayi-4 abakhethi nto, abanye bonke bohluleke bangamaqela alinganayo amabini. Elinye kulamaqela lithanda iilekese, elinye iqela lelabangazithandiyo. Bangaphi abantwana abathhanda iilekese?

(E) 10

16. Calculate:

$2 - 1 + 3 - 2 + 4 - 3 + 5 - 4 + 6 - 5 + \ldots + 101 - 100$

(A) 99 (B) 100 (C) 101 (D) 102

16. Bereken:

$2 - 1 + 3 - 2 + 4 - 3 + 5 - 4 + 6 - 5 + \ldots + 101 - 100$

16. Bala:

$2 - 1 + 3 - 2 + 4 - 3 + 5 - 4 + 6 - 5 + \ldots + 101 - 100$

(E) None of these / Nie een hiervan nie / Ayikho kwezi

17. Ferdi is doing a calculation on his calculator. He then makes a mistake by multiplying by 10 instead of dividing by 10. The calculator answer is 600. What is the correct answer to Ferdi's calculation?

(A) 60 (B) 60 000 (C) 6 000 (D) 6

17. Ferdi is besig met 'n berekening op sy sakrekenaar. Hy vermenigvuldig toe per ongeluk met 10 toe hy moes deel deur 10. Die sakrekenaarantwoord is 600. Wat is die korrekte antwoord vir Ferdi se berekening?

17. U Ferdi ubala ngecalculator yakhe ngokomyalelo othile. Uthi enze impazamo yokuphindaphinda nge 10 endaweni yokwahlula nge 10. Isiphumo asifumanayo kwicalculator ngama 600. Sesiphi esona siphuma sisiso ekufuneka u Ferdi esifumene?

(E) 0,6

18. Peter, Paul and David worked in the garden. Peter worked for 3 hours, Paul worked 2 hours and David worked 1 hour. They are paid R48 for their work altogether. How much should Peter get?

(A) R8 (B) R16 (C) R12 (D) R36

18. Peter, Paul en David het in 'n tuin gewerk. Peter het vir 3 ure, Paul vir 2 ure en David vir 1 uur gewerk. Hulle word saam R48 betaal. Hoeveel moet Peter kry?

18. UPeter, uPaul no David basebenza egadini. UPeter usebenze iiyure ezimbini, ze uDavid asebenze iyure enye. Bahlawulwe 1-R48 bebonke. UPeter kufuneka efumene malini kule mali?

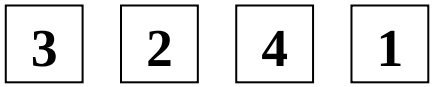
(E) R24

19. Jackie has four cards (see below). How many different two-digit numbers can she make with these cards?

(A) 4 (B) 9 (C) 12 (D) 16

19. Jackie het vier kaarte (sien hieronder). Hoeveel verskillende tweesyfer getalle kan sy met hierdie kaarte maak?

19. U Jackie unamakhasi okudlala amane(bona ngesantsi). Mangaphi amanani anemivo emibini awahlukileyo anokuwenza ngala makhasi?



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

20. Bradford drinks $\frac{1}{2}$ of a jug of milk in the fridge. His sister drinks $\frac{1}{3}$ of the left over milk. What fraction of the original jug of milk is now left over?

(A) $\frac{1}{6}$ (B) $\frac{2}{5}$ (C) $\frac{1}{5}$ (D) $\frac{1}{3}$ (E) $\frac{5}{6}$

20. Bradford drink $\frac{1}{2}$ van ’n beker melk in die yskas. Sy suster drink $\frac{1}{3}$ van die oorblywende melk. Watter breuk van die oorspronklike beker melk is nou oor?

20. U Bradford usela isi $\frac{1}{2}$ sejoko(jug) yobisi olukwisikhenkcezisi. Udade wabo yena usela isi $\frac{1}{3}$ sobisi olushiywe ngumntakwabo. Ingaba luliqhezu elingakanani ubisi oluseleyo ke ngoku?

21. In 10 year's time the combined age of 3 sisters will be 100. What is their combined age now?

(A) 90 (B) 80 (C) 70 (D) 60 (E) 50

21. Oor 10 jaar sal die gesamentlike ouderdom van 3 susters 100 wees. Wat is hulle gesamentlike ouderdom nou?

21. Kwiminyaka eli 10 ezayo isiphumo seminyaka yobudala sodade aba 3 siyakuba li 100. Ingaba isiphumo seminyaka yabo yobudala singakanani namhlanje?

22. 5 ; 9 ; 13 ; 17 ; 21 ; . . .
If the pattern is continued, which of these numbers will appear?

(A) 6152 (B) 4065 (C) 9135 (D) 3028 (E) 3336

22. 5 ; 9 ; 13 ; 17 ; 21 ; . . .
Watter van hierdie getalle sal voorkom as die patroon voortgesit word?

22. 5 ; 9 ; 13 ; 17 ; 21 ; . . .
Ukuba olu luhlu longeziwe, ngeliphi elinye inani elinokuvela?

23. Refer to question 22. What will be the 71st number in the pattern?

(A) 354 (B) 283 (C) 285 (D) 238 (E) 289

23. Verwys na vraag 22. Wat sal die 71ste getal in die patroon wees?

23. Ngokombuzo 22. Ngeliphi inani le-71 elinokuvela?

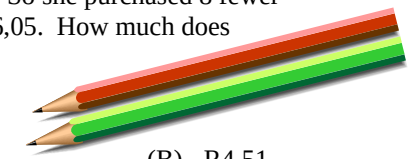
24. The three digits of a three-digit number add up to 25. How many such three-digit numbers are there?

(A) 2 (B) 4 (C) 6 (D) 8 (E) 10

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

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

25. Jerry wanted to purchase 2 dozen pencils and a pen. Altogether, these items cost R48,85, but she did not have enough money. So she purchased 8 fewer pencils and paid R36,05. How much does a pen cost?



(A) R10,45 (B) R4,51 (C) R12,40 (D) R24,80 (E) None of these / Nie een hiervan nie / Ayikho kwezi

25. Jerry wou 2 dosyn potlode en 'n pen koop. Dit sou altesaam R48,85 kos, maar sy het nie genoeg geld nie. Sy koop toe 8 minder potlode en betaal R36,05 daarvoor. Hoeveel kos 'n pen?

25. U Jerry wayefuna ukuthenga i dazini ezi 2 ze pensile kunye ne peni. Zizonke ezi zinto zixabisa ama R48,85, kodwa wayengenayo imali eyaneleyo? Kungoko wagqiba ekubeni athenge inani elincinane ngesi 8 se pensile aze ahlawule ama R36,05. Ingaba ipeni nganye iyakuxabisa malini na?