

Mathematics Challenge

GRADE 5 FIRST ROUND

SEPTEMBER 2005

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. How many blocks did Tacia use to build this shape?

(A) 11

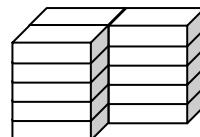
(B) 13

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

(A) 1

(B) 2

1. Hoeveel blokkies het Tacia gebruik om hierdie vorm te bou?

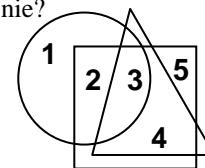


(C) 10

(D) 15

(E) 20

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



(C) 3

(D) 4

(E) 5

Wiskunde-uitdaging

GRAAD 5 EERSTE RONDE

SEPTEMBER 2005

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!

QAPHELA:

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

1. Zingaphi iibhokisi eziisetynziswe ngu-Tacia ukwakha esi sakhiwo?



In cooperation with the
Western Cape Education Department
Gauteng Education Department

Nasou Via Afrika

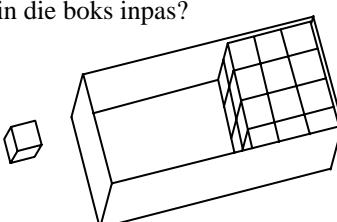


CASIO

RUMEUS

Research Unit for Mathematics Education
of the University of Stellenbosch

-
- | | | |
|---|---|---|
| <p>3. Which one of the following numbers will appear in the sequence
7; 14; 21; 28; ...?
(A) 4236 (B) 4224</p> | <p>3. Watter een van die volgende getalle sal voorkom in die getalry
7; 14; 21; 28; ...?
(C) 4235 (D) 4253</p> | <p>3. Lelipi kula manani alandelayo elizakuvela kolu luhlu
7; 14; 21; 28; ...?
(E) 2442</p> |
| <p>4. What is the only whole number between one and ten which does not divide exactly into 360?
(A) 4 (B) 6</p> | <p>4. Wat is die enigste heelgetal tussen een en tien wat nie presies in 360 indeel nie?
(C) 7 (D) 8</p> | <p>4. Lelipi elona nani lizeleyo eliphakathi kwesinye neshumi ama 360 angohluleki gingci ngalo?
(E) 9</p> |
| <p>5. This open box is 8 cm long, 4 cm wide and 2 cm high. How many of the small 1 cm by 1 cm by 1 cm blocks can be packed into the box?

(A) 32 (B) 14</p> | <p>5. Hierdie oop boks is 8 cm lank, 4 cm breed en 2 cm hoog. Hoeveel van die klein 1 cm by 1 cm by 1 cm blokkies kan in die boks inpas?</p>  | <p>(C) 24 (D) 64 (E) 48</p> |
| <p>6. In question 5: After all the blocks are packed into the box, how many blocks will be touching the box?

(A) 64 (B) 32</p> | <p>6. In vraag 5: Nadat all die blokkies ingepas is, hoeveel blokkies sal aan die boks raak?

(C) 40 (D) 52</p> | <p>6. Kumbuzo 5: Xa iibhokisana ezincinci zithe zafakwa kule bhokisi, zingaphi ezizakuthi zoyame emacaleni nakumgangatho wale bhokisi?

(E) 56</p> |
| <p>7. 40 children were asked whether they liked chocolate. 4 pupils 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</p> | <p>7. 40 Kinders is gevra of hulle van sjokolade hou. 4 leerlinge 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?

(C) 18 (D) 11</p> | <p>7. Bayi-40 abantwana abasegumbini lokufundela. Abayi-4 abakhethi nto, abanye bonke bohluleke bangamaqela alinganayo amabini. Elinye kulamaqela lithanda iilekese, elinje iqela lelabangazithandiyo. Bangaphi abantwana abathanda iilekese?

(E) 10</p> |
| <p>8. Halima is reading a book. Chapter 7 begins on page 246 and ends on page 274. How many pages are there in chapter 7?

(A) 274 (B) 28</p> | <p>8. Halima lees 'n boek. Hoofstuk 7 begin op bladsy 246 en eindig op bladsy 274. Hoeveel bladsye is daar in hoofstuk 7?

(C) 15 (D) 29</p> | <p>8. UHalima ufunda incwadi. Isahluko sesixhenxe siqala kwiphepha le-246, liphele kwiphepha le-274. Mangaphi amaphepha esi sahluko?

(E) 30</p> |
-

9. What is the next number in this pattern?

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

(A) 0,85

(B) 0,35

10. Some numbers read the same forwards and backwards, like 353 and 262. How many such “mirror numbers” are there between 100 and 200?

(A) 7

(B) 8

11. It is now the month of September. What month will it be 100 calendar months from now?

September
(A) September
Septemba

October
(B) Oktober
Okthoba

12. If today is Wednesday, what day of the week will it be 100 days from now?

Wednesday
(A) Woensdag
Lwesithathu

Thursday
(B) Donderdag
Lwesine

13. If my watch now shows 10:00, what will the time be 100 hours from now?

(A) 10:00

(B) 11:00

14. A box with 30 chocolates weighs 1,1 kg.
If 12 chocolates are taken out, it weighs 680 g.
How much does the empty box weigh?

(A) 420 g

(B) 35 g

9. Wat is die volgende getal in hierdie getalpatroon?

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

(C) 1,35

(D) 0,9

9. Leliphi inani elilandela lamanani kolu luhlu lwamani?

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

(E) 0,535

10. Sommige getalle lees dieselfde van voor en van agter, soos 353 en 262. Hoeveel sulke “spieëlgetalle” is daar tussen 100 en 200?

(C) 9

(D) 10

10. Amanye amanani afundeka ngendlela efanayo xa uwafunda uqalela ngaphambili naxa uwafunda uqalela ngemva, njengama 353 nama 262. Mangaphi “amanani azizipili” anjalo afumaneka phakathi kwe 100 nama 200?

(E) 11

11. Dit is nou die maand September. Watter maand sal dit 100 kalendermaande van nou af wees?

November
(C) November
Novemba

December
(D) Desember
Disemba

11. Kuyinyanga ka Septemba ngoku. Iya kuba iyeyiphi inyanga ukusukela ngoku xa kudlule iinyanga ezili 100?

January
(E) Januarie
Janyuwari

12. As dit vandag Woensdag is, watter dag van die week sal dit 100 dae van nou af wees?

Friday
(C) Vrydag
Lwesihlanu

Saturday
(D) Saterdag
Mgqibelo

12. Ukuba namhlanje kungoLwesithathu, Iyakuba iloluphi usuku lweveki xa kudlule iintsku ezili 100 ukusukela ngoku?

Sunday
(E) Sondag
Cawe

13. As my horlosie nou 10:00 wys, hoe laat sal dit wees 100 ure van nou af?

(C) 12:00

(D) 13:00

13. Ukuba iwtshi yam ibonisa ukuba yintsimbi ye 10:00, liyakuba lingubani ixesha emva kwee yure ezili 100 ukusukela ngoku?

(E) 14:00

14. 'n Doos met 30 sjokolades in weeg 1,1 kg.
As 12 sjokolades uitgehaal word, weeg dit 680 g.
Hoeveel weeg die leë doos?

(C) 40 g

(D) 50 g

None of these
(E) Nie een hiervan nie
Awukho kule

15. A class was divided into 2 teams for a charity collection (The *red* team and the *blue* team). The red team collected 3c for every 5c that the blue team collected. If the blue team collected R90, how much did the red team collect?

(A) R120

(B) R60

16. The points A, B, C, D, and E are located on a straight line, in that order.

The distance from A to E is 20 cm
The distance from A to D is 15 cm
The distance from B to E is 10 cm

What is the distance from A to B?

(A) 10 cm

(B) 5 cm

15. 'n Klas word in twee spanne verdeel vir 'n fondsinsameling (Die *rooi* span en die *blou* span). Die *rooi* span het 3c ingesamel vir elke 5c wat die *blou* span ingesamel het. As die *blou* span R90 ingesamel het, hoeveel het die *rooi* span ingesamel?

(C) R150

(D) R54

(E) R18

15. Iklasi yathi yohlulwahlulwa yaba ngamaqela amabini okuba aqokelele ingxowa-mali yembedlenge (Athi abizwa ngokuba liqela bomvu neqela luhlaza). Iqela bomvu laqokelela isi 3c kwisi 5c ngasinye esaqokeleleliqela luhlaza. Ukuba iqela luhlaza laqokelela ama R90, ingaba iqela bomvu laqokelela malini lona?

16. Die punte A, B, C, D, en E lê op 'n reguit lyn, in daardie volgorde.

Die afstand tussen A en E is 20 cm
Die afstand tussen A en D is 15 cm
Die afstand tussen B en E is 10 cm

Wat is die afstand tussen A en B?

(C) 2,5 cm

(D) 15 cm

Not enough information
(E) Nie genoeg inligting nie
Akukho nkazelo yaneleyo

17. 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 20, what would the output number be?

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

(A) 25

(B) 102

17. 'n Rekenaar gebruik 'n geheime formule om 'n uitvoergetal te bereken vir elke invoergetal. Die tabel toon sulke invoer-uitvoer pare. As die invoergetal 20 is, wat sal die rekenaar se uitvoergetal wees?:

<i>Invoergetalle</i>	0	1	2	3
<i>Uitvoergetalle</i>	2	7	12	17

(C) 97

(D) 100

17. I computer inomgaqo olihlebo. Ngenani ngalinye olifikayo kuyo ikhupa elinye inani isebezisa lo mgaqo ulihlebo. Nantsi eminye imizekelo yamanani akhutshwayo kwi computer ibonisiwe kuletafile yamanani. Ukuba ngokwaletafile yalo mgaqo ulihlebo le computer kufakwe inani ama 20, inani elikhutshwayo liyakuba ngubani?:

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

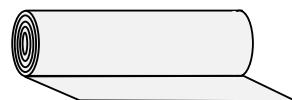
(E) 22

18. After one-tenth of a roll of material was cut off, 99 m of material remains on the roll. How long was the original roll of material?

(A) 90 m

(B) 100 m

18. Na een tiende van 'n rol materiaal afgesny is, bly daar 99 m materiaal oor. Hoe lank was die oorspronklike rol materiaal?



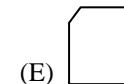
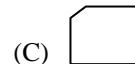
(C) 110 m

(D) 108 m

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

18. Emva kokuba kusikwe isinye-eshumini selaphu ama 99 m seli laphu asala engasikwanga. Lalilide kangakanani elilaphu lingekasikwa?

19. A rectangular card is white on the one side and grey on the other side. If a corner is cut off, the grey side will look like the picture below. Which one is a possible picture of the white side?



20. Joe 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 9000. What is the correct answer to Joe's calculation?

(A) 0,9

(B) 9

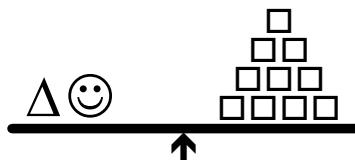
(C) 90

(D) 900

(E) 90 000



21. The sketch shows three ways in which certain objects can be balanced. How many \square s are needed to balance the two \odot s?



(A) 4

(B) 5



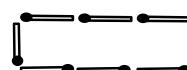
(C) 10



(D) 12

(E) 8

22. John builds rectangles as shown. When the length of the rectangle is 3, there are 8 matches. When the length of the rectangle is 7, there are 16 matches. How many matches does he need to make a rectangle with length 20?



(A) 48

(B) 42

(C) 80

(D) 46

(E) 44

19. 'n Reghoekige kaart is wit aan die een kant en grys aan die ander kant. As 'n hoek afgesny word, sal die grys kant soos die prentjie hieronder lyk. Hoe sal die wit kant lyk?

19. Ikhasi eliluxande limhlophie kwelinye icala lize libe mynaya kwelinye icala. Ukuba ikona ithe yasikwa, icala elimnyama liyakubonakala njengakulomfanekiso ubonisiwego. Ngowuphi kule mifanekso ongowona unokuba ngumfanekiso wecala elimhlophie?

20. Joe is besig met 'n berekening op sy sakrekenaar. Hy vermenigvuldig toe per ongeluk met 10 toe hy moes deel deur 10. Die sakrekenaarantwoord is 9000. Wat is die korrekte antwoord vir Joe se berekening?

20. U Joe ubala ngecalculator yakhe ngokomyalelo othile. Uthi enze impazamo yokuphindaphinda nge 10 endaweni yokwahlula nge 10. Isiphumo asifumanayo kwicalculator ngama 9000. Sesiphi esona siphuma sisiso ekufuneka u Joe esifumene?

21. Die skets wys drie maniere waarop sekere voorwerpe gebalenseer kan word. Hoeveel \square e is nodig om die twee \odot s te balenseer?

21. Umzobo ubonisa iindlela ezi 3 zokulinganisa izinto ngesikali. Ziingaphi ii \square ezifunekayo ukulinganisa ii \odot ezimbini?

22. John bou reghoekke soos getoon. As die lengte van die reghoek 3 is, gebruik hy 8 vuurhoutjies en as die lengte 7 is, gebruik hy 16 vuurhoutjies. Hoeveel vuurhoutjies het hy nodig om 'n reghoek met lengte 20 te bou?

22. UJona wakha esebeenzisa iirekhethengile(rectangles) njengokuba ulathisiwe. Xa ubude becala elide liyisi-3, usebeenzisa izinti zikametshisi eziyisi-8. Xa ical elide liyi-7, usebeenzisa izinti zikametshisi ezili-16. Kufuneka izinti zikametshisi ezingaphi xa icala elide lingama-20 ubude? Phendula uyibhale impendulo yakho kwesi sikhewu usinikiwego.

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

(A) 2

(B) 4

24. 22 teams are entered in a league competition. Every team plays against every other team twice - once at home and once away. How many matches are to be played altogether?

(A) 44

(B) 462

25. Sipho builds "pyramids" with blocks as shown in the sketch below. To build a pyramid 4 blocks high he needs 10 blocks. How many blocks does he need to build a pyramid 50 blocks high?

(A) 2500

(B) 1275

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

(C) 6

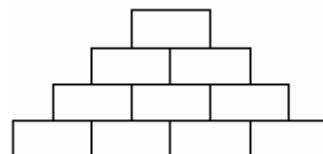
(D) 8

24. 22 spanne het ingeskryf vir 'n ligawedstryd waarin elke span twee keer teen elke ander span speel - een keer tuis en een keer weg. Hoeveel wedstryde moet altesaam gespeel word?

(C) 88

(D) 484

25. Sipho bou "piramides" met blokke soos in die skets getoon. Om 'n piramide 4 blokke hoog te bou, het hy 10 blokke nodig. Hoeveel blokke het hy nodig om 'n piramide 50 blokke hoog te bou?



(C) 2401

(D) 2550

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

(E) 10

24. Kumdlalo wetumente kuzakuqubisana amaqela angama-22. Iqembu ngalinye kufuneka lidlale kabini nelinye - umdlalo ube mnye ekhaya ube mnye ngaphandle. Mingaphi imidlalo eyakuthi idlalwe iyonke?

Nie een hiervan nie

(E) Not one of these
Ayikho kwezi

25. USipho wakha ii "phiramidi" ngeebloko njengoko kubonisiwe kumzobo ongezantsi. Ukwakha iphiramidi eziibloko ezi 4 umphakamo udinga iibloko ezili 10. Zingaphi iibloko azidingayo ukwakha iphiramidi eziibloko ezingama 50 umphakamo?

(E) 2601