

Mathematics Challenge2009

GRADE 5 FIRST ROUND

NOTE:

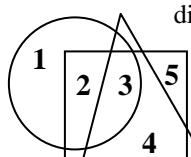
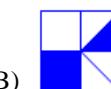
- Answer the questions according to the instructions on the answer sheet.
- You may use a calculator.
- The questions test insight. Complex calculations will therefore not be necessary.
- We hope you enjoy it!

Wiskunde-uitdaging 2009

GRAAD 5 EERSTE RONDE

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!

-
1. A rectangular bathroom wall measures 3 m by 2 m. It is covered with square tiles measuring 20 cm by 20 cm. How many tiles are there altogether?
- (A) 300 (B) 30 (C) 150 (D) 200 (E) 400
2. 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
3. What is the only whole number between one and ten which does not divide exactly into 360?
- (A) 4 (B) 6 (C) 7 (D) 8 (E) 9
4. Which square is the same as the one below?
- 
- (A)  (B)  (C)  (D)  (E) 
5. In a string of beads there are 2 red beads for every 5 green beads and 3 purple beads for every 10 green beads. How many purple beads are there in a string with 12 red beads?
- (A) 50 (B) 10 (C) 9 (D) 15 (E) 18
-



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

6. 1st row: •
 2nd row: • • •
 3rd row: • • • • •
 4th row: • • • • • • •

How many dots would be in the 7th row?

(A) 7

(B) 10

(C) 11

6. 1ste ry: •
 2de ry: • • •
 3de ry: • • • • •
 4de ry: • • • • • • •

Hoeveel kolletjies sal daar in die 7de ry wees?

(D) 13

(E) 15

7. In question 6, how many dots would be in the 70th row?

(A) 137

(B) 139

(C) 140

7. In vraag 6, hoeveel kolletjies sal daar in die 70ste ry wees?

(D) 141

(E) 130

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

(A) 10:00

(B) 11:00

(C) 12:00

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

(D) 13:00

(E) 14:00

9. Sara buys a tree when it is 12 cm high. Every day, she writes down its height in the table below. If the tree continues to grow the same amount every day, how high will it be after 30 days?

Days/Dae	0	1	2	3
Height/Hoogte (cm)	12	13,5	15	16,5

(A) 165 cm

(B) 57 cm

(C) 36 cm

(D) 150 cm

(E) 155 cm

9. Sara koop 'n boom as dit 12 cm hoog is. Sy skryf elke dag die boom se hoogte in die tabel hieronder neer. As die boom aanhou om elke dag dieselfde hoeveelheid te groei, hoe hoog sal dit na 30 dae wees?

10. In question 9: After how many days was the tree 1,5 m high?

(A) 100

(B) 95

(C) 93

10. In vraag 9: Na hoeveel dae was die boom 1,5 m hoog?

(D) 92

(E) 105

11. Which one of the following numbers will appear in this pattern:

7; 13; 19; 25; ... ?

(A) 2 734

(B) 3 526

(C) 3129

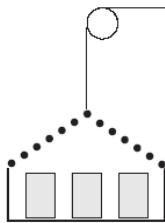
11. Watter een van die volgende getalle sal voorkom in hierdie ry:

7; 13; 19; 25; ... ?

(D) 4 183

(E) 5 345

12. On the scale below, three sacks balance one sack and 30 kg. If each sack weighs the same, what do the three sacks weigh?

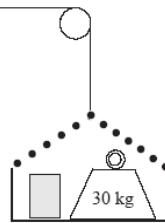


(A) 15 kg

(B) 60 kg

(C) 90 kg

12. Op die skaal hieronder word drie sakke gebalanseer deur een sak en 30 kg. As elke sak dieselfde weeg, wat weeg die drie sakke saam?



(D) 30 kg

(E) 45 kg

13. The sketch shows the first three patterns in the sequence that John is building with coins. How many coins will he need for the fiftieth pattern in the sequence?



(A) 140

(B) 150

(C) 153

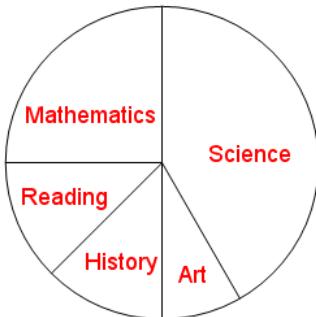
13. Die skets toon die eerste drie patrone in die ry wat John met munstukke uitpak. Hoeveel munstukke het hy nodig vir die vyftigste patroon in die ry?



(D) 155

(E) 160

14. The pie chart below shows the portion of time Zin spent on homework in each subject last week. If he spent 2 hours on mathematics, about how many hours did he spend on homework altogether?

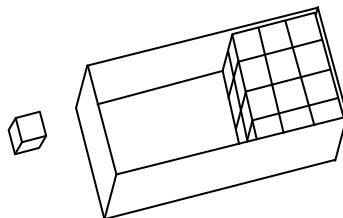


- (A) 4 (B) 8 (C) 12 (D) 15 (E) 16

14. Die sirkeldiagram hieronder toon die gedeelte tyd wat Zin verlede week aan huiswerk vir elke vak bestee het. As hy 2 uur wiskunde gedoen het, omtrent hoeveel uur het hy altesaam aan huiswerk bestee?



15. 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 (C) 24 (D) 64 (E) 48

15. 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?

16. In question 15: After all the blocks are packed into the box, how many blocks will be touching the box?

- (A) 64 (B) 32 (C) 40 (D) 52 (E) 56

16. In vraag 15: Nadat al die blokkies ingepas is, hoeveel blokkies sal aan die boks raak?

17. 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?

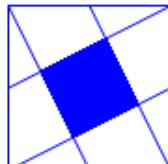


- (A) 48 (B) 42 (C) 80 (D) 46 (E) 44

17. John bou reghoeke 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?

18. The corners of a square are connected to the midpoints of the opposite sides. What fraction of the big square is shaded?

18. Die hoekpunte van 'n vierkant word verbind met die middelpunte van die teenoorstaande sye. Watter breuk van die groot vierkant is verdonker?



- (A) $\frac{1}{2}$ (B) $\frac{1}{3}$ (C) $\frac{1}{4}$ (D) $\frac{1}{5}$ (E) $\frac{1}{9}$

19. Every week Thembo saves R1,50 of his pocket money, while Sipho is able to save $1\frac{1}{2}$ times that amount. How much more would Sipho have saved than Thembo after 12 weeks?
- (A) R9,00 (B) R18,00 (C) R27,00 (D) R16,00 (E) R10,00
-
20. At a fun fair, people have three shots aiming at four tin bunnies. If they hit a bunny, it stays down. The score is the total of the numbers on the bunnies you have hit. Which of these scores is impossible to get?
- 
- (A) 18 (B) 20 (C) 23 (D) 24 (E) 27
-
21. 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 (C) 9 (D) 10 (E) 11
-
22. To make apricot yoghurt you need 5 parts of yoghurt to 1 part of apricots. How many litres of yoghurt are needed to make 30 litres of apricot yoghurt?
- (A) 6 (B) 5 (C) 25 (D) 24 (E) 35
-
23. Penny has twice as many coins as Alex. If Penny gives Alex four coins, they have the same number of coins. How many coins do they have in the beginning?
- (A) 8 (B) 12 (C) 16 (D) 18 (E) 24
-
24. How many four-digit numbers are there in which the sum of the digits is 4?
- (A) 17 (B) 16 (C) 18 (D) 19 (E) 20
-
25. At *Pizza Inn* two small pizzas and one large pizza costs the same as five small pizzas. If a small pizza costs R11,50, what does a large pizza cost?
- (A) R28,75 (B) R23 (C) R27,50 (D) R34,50 (E) R21,50
-

19. Thembo spaar elke week R1,50 van sy sakgeld. terwyl Sipho $1\frac{1}{2}$ keer soveel spaar. Hoeveel meer sal Sipho as Thembo gespaar hê na 12 weke?
- (D) R16,00 (E) R10,00
-
20. By 'n kermis kry mense drie skote na vier blikhasies. As jy 'n hasie tref, val dit om en bly dit af. Die telling is die totaal van die getalle op die hasies wat jy getref het. Watter van hierdie telling is onmoontlik om te kry?