

Mathematics Challenge

GRADE 5 FIRST ROUND

SEPTEMBER 2007

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

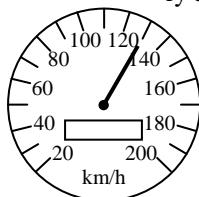
GRAAD 5 EERSTE RONDE

SEPTEMBER 2007

LET OP:

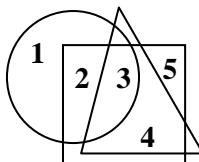
- Beantwoord die vrae volgens die instruksies op die antwoordblad.
- Jy mag 'n sakrekenaar gebruik.
- Die vrae toets insig. Omslagtige berekeninge is dus onnodig en tydrowend.
- Ons hoop jy geniet dit!

1. The sketch shows the speedometer of a car. At what speed is the car driving?



- (A) 120 km/h (B) 121 km/h (C) 125 km/h (D) 130 km/h (E) 135 km/h

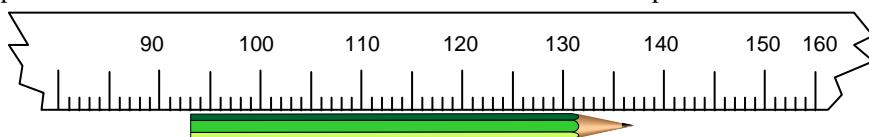
2. Which number is in the square and the circle but is not in the triangle?



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. How long is the pencil?



- (A) 147 mm (B) 154 mm (C) 54 mm (D) 44 mm (E) 84 mm

5. 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 (D) 13:00 (E) 14:00

1. Die skets wys die spoedmeter van 'n motor. Hoe vinnig ry die motor?

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

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

How many dots would be in the 7th row?

- (A) 13 (B) 10 (C) 11

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

Hoeveel kolletjies sal daar in die 7de ry wees?

- (D) 7 (E) 15

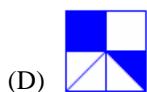
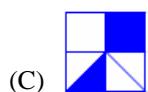
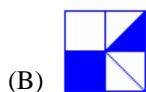
7. In question 6, how many dots would be in the 70th row?

- (A) 137 (B) 139 (C) 140

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

- (D) 141 (E) 130

8. Which square is the same as the one below?



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; ... ?

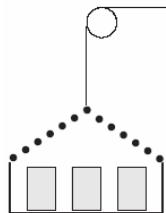
- (A) 2 734 (B) 3 526 (C) 3 129

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

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

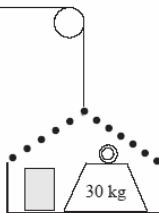
- (D) 4 183 (E) 5 345

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. Shaun bought a burger, a cold drink and an ice-cream cone for R19. If the burger costs R4 more than the ice-cream and the ice-cream costs R3 more than the cold drink, what did the ice-cream cost?

- (A) R12 (B) R4 (C) R6

13. Shaun koop 'n burger, 'n koeldrank en 'n roomys vir R19. As die burger R4 meer as die roomys kos en die roomys R3 meer as die koeldrank kos, hoeveel het die roomys gekos?

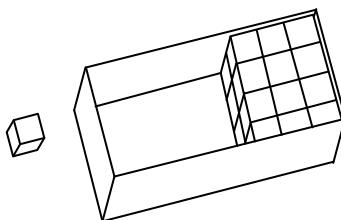
- (D) R3 (E) R5

14. In the diagram, each row, each column and each diagonal contains each of the numbers 1, 2, 3 and 4 once. What is $a + b$?

1	<i>a</i>	<i>b</i>	
2			
		3	
		1	

- (A) 6 (B) 4 (C) 5 (D) 3 (E) 7

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?



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

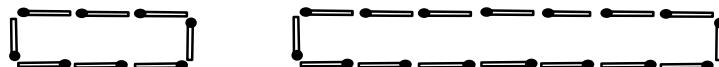
- (A) 32 (B) 14 (C) 24 (D) 64 (E) 48

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

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

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?

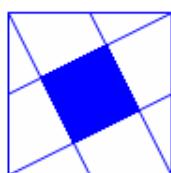


- (A) 48 (B) 42 (C) 80 (D) 46 (E) 44

17. John bou reghoek 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. The sketch shows the first three patterns in the sequence that John is building with coins. How many coins will he need for the 50th pattern in the sequence?

19. Die skets toon die eerste drie patronen in die ry wat John met munstukke uitpak. Hoeveel munstukke het hy nodig vir die 50^{ste} patroon in die ry?



- (A) 140 (B) 150 (C) 153 (D) 155 (E) 160

20. 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

20. In 'n string krale is daar 2 rooi krale vir elke 5 groenes en 3 pers krale vir elke 10 groenes. Hoeveel pers krale is daar in 'n string met 12 rooi krale?

(D) 15 (E) 18

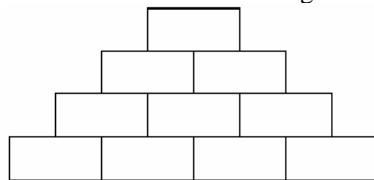
21. Some numbers read the same forwards and backwards, like 353 and 262. How many such “mirror numbers” are there between 100 and 200?

(A) 7 (B) 8 (C) 9

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

(D) 10 (E) 11

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



(A) 2500 (B) 1275 (C) 2401 (D) 2550 (E) 2601

22. Sipho bou “piramides” met blokke soos in die skets getoon. Om soos hier 'n piramide 4 blokke hoog te bou, het hy 10 blokke nodig. Hoeveel blokke het hy altesaam nodig om 'n piramide 50 blokke hoog te bou?

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

23. Penny het twee keer soveel muntstukke as Alex. As Penny vir Alex vier muntstukke gee, het hulle ewe veel muntstukke. Hoeveel muntstukke het hulle in die begin saam gehad?

(D) 18 (E) 24

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



(A) 8 (B) 12 (C) 16 (D) 18 (E) 24

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

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

25. By *Pizza Inn* kos twee klein pizzas en een groot pizza net soveel soos vyf klein pizzas. As 'n klein pizza R11,50 kos, wat kos 'n groot pizza?

(D) R34,50 (E) R21,50