

# Mathematics Challenge 2008

## 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 2008

## 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. Here are the times of the six athletes in the 100 metres final for boys. Who came third?

Ben Bailey:	11,9 s	Ivan Arends:	11,59 s
Garry Smith:	11,63 s	William Park:	11,23 s
Peter Davids:	11,4 s	John Mbeki:	11,32 s

- (A) Ben Bailey      (B) Ivan Arends      (C) Peter Davids      (D) John Mbeki      (E) Garry Smith

2. When Lucy's mother was 40, Lucy was 16. Now her mother is twice as old as Lucy. How old is Lucy now?

- (A) 24      (B) 32      (C) 48

1. Hieronder is die tye van die ses atlete in die seuns 100 meter-finaal. Wie het derde gekom?

2. Toe Lucy se ma 40 was, was Lucy 16. Nou is haar ma twee keer so oud soos Lucy. Hoe oud is Lucy nou?

- (D) 16      (E) 20

3. A cake is put in the oven at 07:20. If the cake takes three quarters of an hour to bake, at what time should it be taken out of the oven?

- (A) 08:10      (B) 08:05      (C) 08:15

3. 'n Koek word om 07:20 in die oond gesit. As die koek 'n driekwart uur neem om te bak, hoe laat moet dit uit die oond gehaal word?

- (D) 07:50      (E) 07:55

4. 500 bottles of wine must be packed into cartons. Each carton holds 12 bottles. How many cartons are needed?

- (A) 41      (B) 42      (C)  $41\frac{2}{3}$

4. 500 Bottels wyn moet in kartonne verpak word. Elke karton hou 12 bottels. Hoeveel kartonne word benodig?

- (D) 41,67      (E) 43

5. Mr Greengrocer piles grapefruit in a square pyramid with 1 grapefruit in the first layer, 4 in the second layer from the top, 9 in the third layer, 16 in the fourth layer, etc. How many grapefruit will there be in the 10<sup>th</sup> layer?

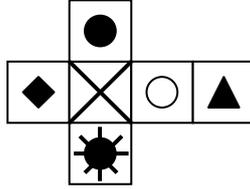


- (A) 100      (B) 81      (C) 20      (D) 144      (E) 121



6. A boxing match has twelve rounds of 3 minutes each and there is a minute break between each round. How long does the match last if it lasts the full 12 rounds?
- (A) 48 min      (B) 47 min      (C) 37 min      (D) 36 min      (E) 46 min

7. Which of these cubes *cannot* be folded from this net?      7. Watter kubus kan *nie* gevou word uit hierdie net nie?

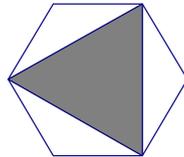


- (A)      (B)      (C)      (D)      (E)

8. In a certain school there are 5 boys for every 6 girls. If there are 150 girls, how many boys are there in the school?
- (A) 125      (B) 120      (C) 180      (D) 30      (E) 250

9. When Mark arrives at the garage, his car's petrol gauge shows that the petrol tank is  $\frac{1}{8}$  full. After putting in 25 litres of petrol, the gauge reads  $\frac{5}{8}$  full. How many litres does the petrol tank hold when full?
- (A) 40      (B) 45      (C) 50      (D) 60      (E) 100

10. What fraction of this regular hexagon is shaded?      10. Watter breuk van hierdie reëlmatige seshoek is verdonker?



- (A)  $\frac{1}{2}$       (B)  $\frac{1}{4}$       (C)  $\frac{1}{3}$       (D)  $\frac{1}{6}$       (E)  $\frac{3}{8}$

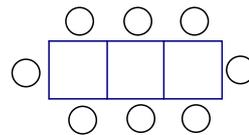
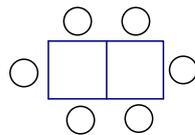
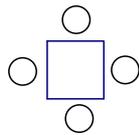
11. Samuel is doing a calculation on his calculator. He then makes a mistake by multiplying by 10 instead of dividing by 10. The calculator answer is 500. What is the correct answer to Samuel's calculation?
- (A) 50      (B) 50 000      (C) 5 000      (D) 5      (E) 0,5

12. How many 3-digit numbers are there in which the sum of the digits is 3?
- (A) 6      (B) 5      (C) 4      (D) 7      (E) 8

13. Which one of the following numbers will appear in the sequence 5; 11; 17; 23; ...?
- (A) 732      (B) 255      (C) 187      (D) 525      (E) 365

14. For his party, Justin bought a Super-Duper Pizza and cut it into 24 equal pieces. At the party, Mary ate  $\frac{1}{6}$  of the pizza, Veronica ate  $\frac{1}{4}$  of it, and Ron ate  $\frac{1}{3}$  of it. Justin ate the rest. How many pieces did Justin eat?
- (A) 4                      (B) 10                      (C) 8                      (D) 9                      (E) None of these  
Nie een hiervan nie

15. To seat people at his party Justin makes one long table by joining a number of small tables as shown. Each small table can seat two persons, plus one at each end of the long table. How many people can be seated at 20 small tables?
15. Vir sitplek by sy partyjie maak Justin een lang tafel deur 'n aantal klein tafeltjies teen mekaar te stoot soos getoon. By elke klein tafeltjie kan twee persone sit, plus een aan elke kop van die lang tafel. Hoeveel mense kan by 20 klein tafeltjies sit?



- (A) 80                      (B) 40                      (C) 42                      (D) 44                      (E) 43

16. In question 15: If Justin invites 58 people to his party, how many small tables does he need?
16. In vraag 15: As Justin 58 mense na sy partyjie nooi, hoeveel klein tafeltjies het hy nodig?
- (A) 28                      (B) 29                      (C) 30                      (D) 31                      (E) 32

17. A number of boys and girls have R32 between them. Each boy has R4 and each girl has R5. How many boys and girls are there all together?
17. 'n Aantal seuns en meisies het altesaam R32. Elke seun het R4 en elke meisie het R5. Hoeveel seuns en meisies is daar altesaam?
- (A) 9                      (B) 7                      (C) 6                      (D) 5                      (E) 4

18. Mary buys a gift and puts it into a pretty box which is 420 mm long, 230 mm wide and 270 mm high. She decides to strengthen the box by putting sticky tape all along the edges of the box. How much tape does Mary need?
18. Mary koop 'n geskenk en plaas dit in 'n doos wat 420 mm lank, 230 mm wyd en 270 mm hoog is. Sy besluit om die doos te versterk deur kleeflint al om die rande van die doos te plak. Hoeveel lint het Mary nodig?
- (A) 3,140 m                      (B) 3,680 m                      (C) 1,840 m                      (D) 3,220 m                      (E) 3,480 m

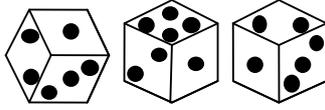
19. In question 18: Mary now ties up the box with yellow ribbon as shown. If 40 cm of ribbon is used to tie the knot and the bow, what length of ribbon does she use altogether?
19. In vraag 18: Mary bind nou die doos met 'n geel lint toe, soos getoon. Hoeveel lint gebruik sy altesaam indien 40 cm gebruik word vir die knoop en strik?



- (A) 3,680 m                      (B) 2,680 m                      (C) 2,420 m                      (D) 2,780 m                      (E) 2,380 m

20. In 10 year's time the combined age of 4 sisters will be 100. What is their combined age now?
20. Oor 10 jaar sal die gesamentlike ouderdom van 4 susters 100 wees. Wat is hulle gesamentlike ouderdom nou?
- (A) 90                      (B) 80                      (C) 70                      (D) 60                      (E) 50

21. Three six-faced dice are rolled and the scores are multiplied together. The product is 90. What is the sum of the three scores?



- (A) 90      (B) 14      (C) 16      (D) 18      (E) 8

21. Drie ses-vlakkige dobbelstene word gerol en die tellings word dan vermenigvuldig. Die produk is 90. Wat is die som van die drie tellings?

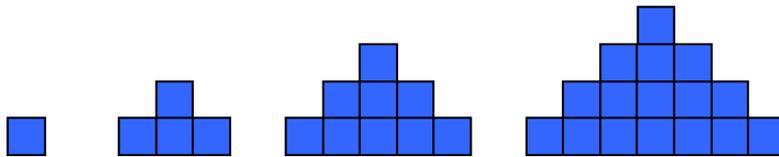
22. Jackie has four cards (see below). How many different four-digit numbers can she make with these cards?



- (A) 24      (B) 12      (C) 16      (D) 18      (E) 6

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

23. Siphon builds "pyramids" with blocks as shown in the sketch. To build a pyramid 4 rows high he needs 16 blocks. How many blocks does he need in total to build a pyramid 50 rows high?



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

23. Siphon bou "piramides" met blokke soos in die skets getoon. Om soos hier 'n piramide 4 rye hoog te bou, het hy 16 blokke nodig. Hoeveel blokke het hy altesaam nodig om 'n piramide 50 rye hoog te bou?

24. In question 23, in a pyramid that is 50 rows high, how many blocks are there in the bottom row?

- (A) 99      (B) 101      (C) 102      (D) 104      (E) 100

24. In vraag 23, in 'n piramide wat 50 rye hoog is, hoeveel blokke is daar in die onderste ry?

25. In question 23, if Siphon build a pyramid with 1369 blocks, how many rows does the pyramid have?

- (A) 37      (B) 23      (C) 27      (D) 33      (E) 47

25. In vraag 23, as Siphon 'n piramide met 1369 blokke bou, hoeveel rye het die piramide?