

Math Competition

UJEP

Department of Mathematics and Applied
Mathematics
Departement Wiskunde en Toegepaste Wiskunde

GRADES 6 AND 7

GRADE 6 EN 7

31 July – 5 Aug 2017

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TIME: 2 HOURS

TYD: 2 URE

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Denkleiers • Leading Minds • Dikgopolo tša Dihlalefi

Leading Minds

INSTRUCTIONS

- ◆ No calculators or other calculation aids are allowed.
- ◆ **Mark allocation**
Every question counts 1 mark.
Random guessing is not advisable, as the mark allocated to a question may be deducted for a wrong answer.
- ◆ Every question has five possible answers, (A) to (E).
Only **ONE** answer is correct.
Colour in the rectangle of the correct answer on the answer sheet.
Do not colour outside the rectangle.
Use a soft pencil.

Example:

Suppose Question 21 reads:

The smallest integer larger than 1 is

(A) 0 (B) -1 (C) 1 (D) 2 (E) 3

The correct answer is 2, which is answer (D).

On the answer sheet you must colour in the rectangle (D) against Question 21.

Question 21 / Vraag 21 (A) (B) (C) (D) (E)

INSTRUKSIES

- ◆ Geen sakrekenaars of ander rekenhulpmiddels word toegelaat nie.
- ◆ **Puntetoekenning**
Elke vraag tel 1 punt.
Raaiery word nie aanbeveel nie, aangesien die punt toegeken aan die vraag afgetrek mag word vir 'n verkeerde antwoord.
- ◆ Elke vraag het vyf moontlike antwoorde, (A) tot (E).
Slegs **EEN** antwoord is korrek.
Kleur die reghoek van die korrekte antwoord op die antwoordvel in.
Moenie buite die reghoek inkleur nie.
Gebruik 'n sagte potlood.

Voorbeeld:

Gestel Vraag 21 is:

Die kleinste heelgetal groter as 1 is

(A) 0 (B) -1 (C) 1 (D) 2 (E) 3

Die korrekte antwoord is 2, en dit is antwoord (D).

Op die antwoordvel moet jy die reghoek (D) inkleur teenoor Vraag 21.

Question 21 / Vraag 21 (A) (B) (C) (D) (E)

Question 1

$$123 - 45 + 6 \times 7 =$$

- (A) 119 (B) 120 (C) 123 (D) 125 (E) 126
-

Vraag 1

$$123 - 45 + 6 \times 7 =$$

- (D) 125 (E) 126
-

Question 2

Which one of the following fractions is also equal to $\frac{20}{1+7}$?

- (A) $\frac{20}{7}$ (B) $\frac{10}{7}$ (C) $\frac{5}{8}$ (D) $\frac{5}{4}$ (E) $\frac{5}{2}$
-

Vraag 2

Watter een van die volgende breuke is ook gelyk aan $\frac{20}{1+7}$?

- (D) $\frac{5}{4}$ (E) $\frac{5}{2}$
-

Question 3

There are 28 children in a class. How many boys are there in the class if the ratio of boys to girls is 4 : 3?

- (A) 16 (B) 12 (C) 20 (D) 7 (E) 14
-

Vraag 3

Daar is 28 kinders in 'n klas. Hoeveel seuns is in die klas, as die verhouding van seuns tot meisies 4 : 3 is?

- (D) 7 (E) 14
-

Question 4

The price of a chocolate is R7,70 and the price of a coke is R8,90 at a shop. If Letshego buys two chocolates and one coke with R30, how much change should she get?

- (A) R4,70 (B) R5,70 (C) R6,70 (D) R7,70 (E) R8,70
-

Vraag 4

Die prys van 'n sjokolade is R7,70 en die prys van 'n coke is R8,90 by 'n winkel. As Letshego twee sjokolades en een coke koop met R30, hoeveel kleingeld moet sy kry?

- (D) R7,70 (E) R8,70
-

Question 5

A prime number has exactly two different positive factors: one and itself. Which one of the following numbers is a prime number?

- (A) 99 (B) 69 (C) 39 (D) 49 (E) 59
-

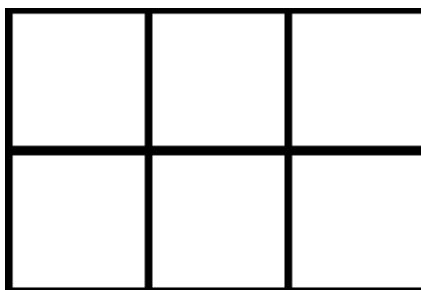
Vraag 5

'n Priemgetal het presies twee verskillende positiewe faktore: een en homself. Watter van die volgende getalle is 'n priemgetal?

- (D) 49 (E) 59
-

Question 6

How many different rectangles (of all sizes) are there in this figure? Some do overlap.



- (A) 12 (B) 14 (C) 16 (D) 18 (E) 20
-

Vraag 6

Hoeveel verskillende reghoeke (van alle groottes) is daar in hierdie figuur? Party oorvleuel.

Question 7

What integer is covered by the butterfly in the equation below?

Vraag 7

Watter heelgetal word deur die skoenlapper in die vergelyking hieronder bedek?

$$2017 - 20 = 1720 + 17 + \img alt="butterfly" data-bbox="658 545 720 586"/>$$

- (A) 230 (B) 240 (C) 250 (D) 260 (E) 270
-

Question 8

How many seconds are there in $\frac{1}{8}$ of $\frac{1}{9}$ of $\frac{1}{10}$ of a day?

Vraag 8

Hoeveel sekondes is daar in $\frac{1}{8}$ van $\frac{1}{9}$ van $\frac{1}{10}$ van 'n dag?

- (A) 60 (B) 90 (C) 120 (D) 150 (E) 180
-

Question 9

A triangle and a square have the same perimeter. If the triangle has sides 9 cm, 16 cm and 19 cm, what is the area of the square?

Vraag 9

'n Driehoek en vierkant het dieselfde omtrek. Wat is die oppervlakte van die vierkant, as die driehoek sylyngtes 9 cm, 16 cm en 19 cm het?

- (A) 64 cm^2 (B) 81 cm^2 (C) 100 cm^2 (D) 121 cm^2 (E) 484 cm^2
-

Question 10

Which one of the following calculations is WRONG?

- (A) $4 \times 5 + 67 = 45 + 6 \times 7$
(B) $3 \times 7 + 48 = 37 + 4 \times 8$
(C) $6 \times 3 + 85 = 63 + 8 \times 5$
(D) $2 \times 5 + 69 = 25 + 6 \times 9$
(E) $9 \times 6 + 73 = 96 + 7 \times 3$

Vraag 10

Watter een van die volgende vergelykings is VERKEERD?

Question 11

Habib wrote down five numbers that had an average of 60. He then wrote another number so that the new average was 70. What new number did Habib write down?

- (A) 70 (B) 110 (C) 120 (D) 130 (E) 140

Vraag 11

Habib het vyf getalle neergeskryf met 'n gemiddelde van 60. Hy skryf toe 'n nuwe getal neer sodat die nuwe gemiddelde 70 word. Watter nuwe getal het Habib neergeskryf?

Question 12

What is the remainder when 2017 is divided by 7?

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

Vraag 12

Wat is die res as 2017 deur 7 gedeel word?

Question 13

When a barrel is 70% full it contains 30 litres more water than when it is 30% full. How many litres of water does the barrel contain when it is full?

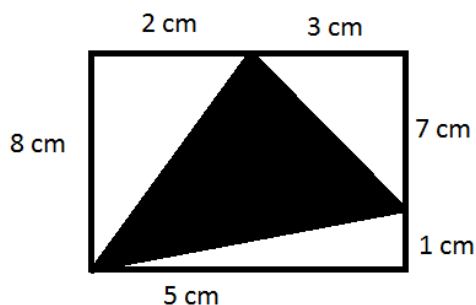
- (A) 60 (B) 75 (C) 90 (D) 100 (E) 120
-

Vraag 13

Wanneer 'n vaasje 70% vol is, bevat dit 30 liter meer water as wanneer dit 30% vol is. Hoeveel liter water bevat die vaasje as dit vol is?

Question 14

In the rectangle below, side lengths are shown. What is the area of the shaded triangle?



- (A) 18 cm^2 (B) 16 cm^2 (C) 20 cm^2 (D) 21 cm^2 (E) 19 cm^2
-

Question 15

The odometer in Joe's car shows 187569 kilometres. Note that the digits in this number are all different. After driving how many kilometres, will the odometer again show a number consisting of all different digits?

- (A) 3 (B) 11 (C) 21 (D) 17 (E) 15
-

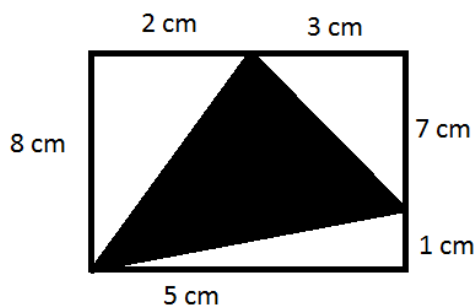
Question 16

The number 2581953764 is written on a piece of paper. Nxolo cuts the paper twice and gets three numbers which she adds up. What is the smallest possible sum that she can get?

- (A) 2675 (B) 2775 (C) 2875 (D) 2975 (E) 3075
-

Vraag 14

In die reghoek hieronder word sy lengtes aangetoon. Wat is die oppervlakte van die gekleurde driehoek?



- (A) 18 cm^2 (B) 16 cm^2 (C) 20 cm^2 (D) 21 cm^2 (E) 19 cm^2
-

Vraag 15

Die lesing op die afstandmeter in Joe se kar is 187659 kilometers. Let op dat al die syfers in die getal verskillend is. Na hoeveel kilometer sal die afstandmeter weer 'n getal wys waarvan al die syfers verskillend is?

- (A) 3 (B) 11 (C) 21 (D) 17 (E) 15
-

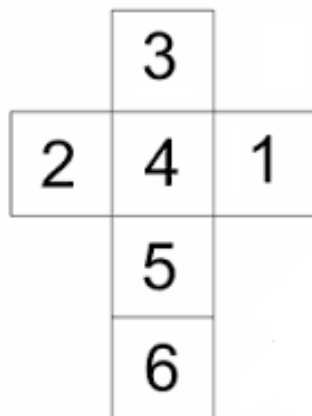
Vraag 16

Die getal 2581953764 word op 'n stuk papier geskryf. Nxolo sny die papier twee keer en kry drie getalle wat sy optel. Wat is die kleinste moontlike som wat sy kan kry?

- (A) 2675 (B) 2775 (C) 2875 (D) 2975 (E) 3075
-

Question 17

The figure below can be folded to form a cube. What is the LARGEST sum of the three numbers on faces sharing the same corner?



- (A) 10 (B) 11 (C) 12 (D) 13 (E) 14

Question 18

Four towns lie on a straight road in a certain country. In the table below, distances (in kilometres) between some of the towns are given. How far is Anto from Cern?

| | Anto | Blux | Cern |
|------|------|------|------|
| Blux | 315 | 0 | 1398 |
| Dipi | 209 | 524 | 874 |

- (A) 1083 km (B) 1189 km (C) 839 km (D) 733 km (E) 524 km
-

Vraag 17

Die figuur hieronder kan gevou word om 'n kubus te vorm. Wat is die GROOTSTE som van die drie getalle op vlakke wat by 'n hoek bymekaar kom?

Vraag 18

Vier dorpe lê op 'n reguit pad in 'n sekere land. In die tabel hieronder word afstande (in kilometer) tussen sommige van die dorpe gegee. Hoe ver is dit van Anto na Cern?

Question 19

In the Naidoo family there is a father, a mother, a daughter and a son. The sum of their ages is 95 now. Now, the father is 3 years older than the mother and the son is 2 years older than the daughter. Five years ago, the dad was 7 times as old as the son. What is the age of the mom now?

- (A) 35 (B) 37 (C) 39 (D) 41 (E) 43
-

Question 20

One of five pupils lost the teacher's pen during break. When questioned, they said:

Ann: "It was Ben or Con."

Ben: "Neither Epp nor I did it."

Con: "Ann and Ben are both lying."

Dan: "Ann or Ben is telling the truth."

Epp: "Dan is lying."

The teacher knows that three students spoke the truth, but the other two lied. Who lost the teacher's pen?

- (A) Ann (B) Ben (C) Con
-

Vraag 19

In die Naidoo gesin is daar 'n pa, 'n ma, 'n dogter en 'n seun. Die som van hulle ouderdomme is nou 95. Die pa is nou 3 jaar ouer as die ma en die seun is 2 jaar ouer as die dogter. Vyf jaar gelede was die pa 7 keer so oud as die seun. Wat is die ouderdom van die ma nou?

- (D) 41 (E) 43
-

Vraag 20

Een van vyf leerlinge het die onderwyser se pen gedurende pouse verloor. Tydens ondervraging het hulle die volgende gesê:

Ann: "Dit was Ben of Con."

Ben: "Dit was nie ek of Epp nie."

Con: "Ann en Ben praat nie die waarheid nie."

Dan: "Ann of Ben praat die waarheid."

Epp: "Dan praat nie die waarheid nie."

Die onderwyser weet dat drie die waarheid gepraat het en twee het nie die waarheid gepraat nie. Wie het die onderwyser se pen verloor?

- (D) Dan (E) Epp
-