Fakulteit Natuur- & Landbouwetenskappe

Faculty of Natural & Agricultural Sciences

Department of Mathematics and Applied Mathematics

Departement Wiskunde en Toegepaste Wiskunde

MATHEMATICS COMPETITION **WISKUNDE KOMPETISIE**

GRADES 6 AND 7

GRADE 6 EN 7

SEPTEMBER 2014

TIME: 2 HOURS

SEPTEMBER 2014

TYD: 2 URE

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

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 ’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 / Vraag 1

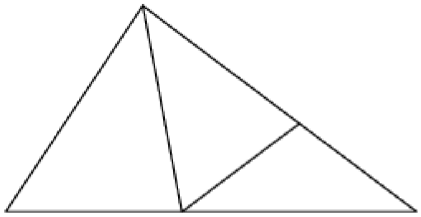
$$1 - 2 \times 3 + 4 \times 5 =$$

(**A**) 5 (**B**) 11 (**C**) 13 (**D**) 15 (**E**) 17

Question 2 / Vraag 2

How many triangles are there in this diagram? (some may overlap)

Hoeveel driehoeke is daar in die volgende diagram? (party mag oorvleuel)



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

Question 3 / Vraag 3

The price of a chocolate is R4.70 and the price of a coke is R6.40. If Letshego buys two chocolates and one coke with a R20 note, how much change should she get?

Die prys van 'n sjokolade is R4.70 en die prys van 'n coke is R6.40 by 'n winkel. As Letshego twee sjokolades en een coke koop met 'n R20 noot, hoeveel kleingeld moet sy kry?

(**A**) $R9.90$ (**B**) $R4.20$ (**C**) $R5.20$ (**D**) $R3.50$ (**E**) $R6.20$

Question 4 / Vraag 4

What is the sum of the numbers in the three squares?

Wat is die som van die getalle in die drie blokkies?

$$\frac{1}{2} = \frac{\square}{6}; \qquad 2\frac{4}{5} = \frac{\square}{5}; \qquad \frac{2}{3} = \frac{\square}{12}$$

(**A**) 22 (**B**) 23 (**C**) 24 (**D**) 25 (**E**) 26

Question 5 / Vraag 5

A computer can do 20 000 additions per second. How many additions can the computer do in one hour?

'n Rekenaar kan 20 000 optelsomme doen in 'n sekonde. Hoeveel optelsomme kan 'n rekenaar doen in een uur?

(A) 12 million **(B)** 72 million **(C)** 120 million **(D)** 432 million **(E)** 720 million

(A) 12 miljoen **(B)** 72 miljoen **(C)** 120 miljoen **(D)** 432 miljoen **(E)** 720 miljoen

Question 6

The ratio of boys to girls in mister Wiggins math class is 2 : 3. If there are 60 students in the class, how many more girls than boys are there in the class?

(**A**) 2 (**B**) 6 (**C**) 10 (**D**) 12 (**E**) 20

Vraag 6

Die verhouding van seuns tot dogters in Meneer Wiggins se wiskunde klas is 2 : 3. As daar 60 studente in die klas is, hoeveel meer dogters as seuns is daar in die klas?

Question 7

Calculate $\dfrac{2}{2+\dfrac{3}{4}}$.

(**A**) $\frac{4}{3}$ (**B**) $\frac{2}{11}$ (**C**) $\frac{11}{2}$ (**D**) $\frac{11}{8}$ (**E**) $\frac{8}{11}$

Vraag 7

Bereken $\dfrac{2}{2+\dfrac{3}{4}}$.

Question 8

Pieter's birthday is on a Thursday this year. What day of the week will it be 60 days after his birthday?

(**A**) Monday (**B**) Wednesday (**C**) Thursday (**D**) Friday (**E**) Saturday

Vraag 8

Pieter se verjaarsdag is vanjaar op 'n Donderdag. Watter dag van die week sal dit 60 dae na sy verjaarsdag wees?

(**A**) Maandag (**B**) Woensdag (**C**) Donderdag (**D**) Vrydag (**E**) Saterdag

Question 9

In the addition problem, each digit has been replaced by a letter. If different letters represent different digits then Z equals

$$\begin{array}{r} \text{XYZ} \\ +\ \text{XY} \\ +\ \text{X} \\ \hline =700 \end{array}$$

(**A**) 0 (**B**) 1 (**C**) 2 (**D**) 3 (**E**) 4

Vraag 9

In die optelsom is elke letter vervang met 'n syfer. As elke letter 'n verskillende syfer verteenwoordig, is Z gelyk aan

Question 10

Jack had a bag of 128 apples. He solds 25% to Jill. Next he sold 25% of those remaining to June. How many apples does Jack now have?

(**A**) 32 (**B**) 48 (**C**) 72 (**D**) 84 (**E**) 96

Vraag 10

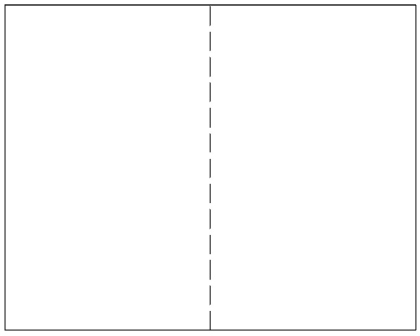
Jack het 'n sakkie met 128 appels. Hy verkoop 25% aan Jill. Daarna verkoop hy 25% van wat oorbly aan June. Hoeveel appels het Jack nou?

Question 11

If you fold a square piece of paper vertically, the new rectangle has a perimeter of 48 cm. What is the area of the square?

Vraag 11

As jy 'n vierkantige vel papier vertikaal vou, het die nuwe reghoek 'n omtrek van 48 cm. Wat is die oppervlakte van die vierkant?



(**A**) 64 cm^2 (**B**) 128 cm^2 (**C**) 144 cm^2 (**D**) 256 cm^2 (**E**) 288 cm^2

Question 12

Ann, Ben, Cor and Dan are seated in a row with seat numbers 1 to 4. Ellie looks at them and says, "Ben is next to Cor" and "Ann is between Ben and Cor." However each one of Ellie's statements is false. Ben is actually sitting in seat 3. Who is sitting in seat 2?

Vraag 12

Ann, Ben, Cor en Dan sit in 'n ry met sitpleknommers 1 tot 4. Ellie kyk na hulle en sê, "Ben sit langs Cor" en "Ann is tussen Ben en Cor." Altwee van Ellie se opmerkings is onwaar. As Ben in sitplek 3 sit, wie sit in sitplek nommer 2?

(A) Ann **(B)** Ben **(C)** Cor **(D)** Dan **(E)** Not enough info/Nie genoeg inligting

Question 13

An elephant eats 1 000 bananas from Monday to Friday. Each day he eats 60 more bananas than the previous day. How many bananas does he eat on Friday?

Vraag 13

'n Olifant eet 1000 piesangs van Maandag tot Vrydag. Elke dag eet hy 60 piesangs meer as die vorige dag. Hoeveel piesangs eet hy op Vrydag?

(**A**) 200 (**B**) 220 (**C**) 260 (**D**) 280 (**E**) 320

Question 14

Complete

Vraag 14

Voltooi

$$1234 \times 789 =$$

(**A**) 973 606 (**B**) 973 616 (**C**) 973 626 (**D**) 973 636 (**E**) 973 646

Question 15

Let $\boxed{N}$ mean the number of factors of N. For example, $\boxed{6}$=4 because 6 has four factors, 1,2,3 and 6. Find the value of

$$\boxed{\boxed{11} \times \boxed{20}}$$

(**A**) 6 (**B**) 8 (**C**) 12 (**D**) 16 (**E**) 24

Vraag 15

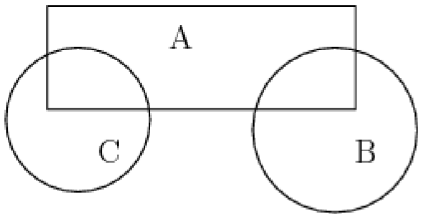
Laat $\boxed{N}$ die aantal faktore van N wees. By voorbeeld, $\boxed{6}$=4 want 6 het 4 faktore 1,2,3 and 6. Bereken die waarde van

$$\boxed{\boxed{11} \times \boxed{20}}$$

(**A**) 6 (**B**) 8 (**C**) 12 (**D**) 16 (**E**) 24

Question 16

Three flower beds overlap as shown. Bed A has 400 plants, bed B has 450 plants, and bed C has 350 plants. Beds A and B share 50 plants, while beds A and C share 100. The total number of plants is



(**A**) 750 (**B**) 900 (**C**) 1050 (**D**) 1200 (**E**) 1350

Vraag 16

Drie blombeddings oorvleuel soos aangedui. Bedding A het 400 plante, bedding B het 450 plante en bedding C het 350 plante. Beddings A en B deel 50 plante, terwyl beddings A en C 100 plante deel. Die aantal plante is

(**A**) 750 (**B**) 900 (**C**) 1050 (**D**) 1200 (**E**) 1350

Question 17

A list of 6 numbers is formed by beginning with two numbers. Each new number in the list is the product of the two previous numbers. Find the first number if the last three are shown.

$$\underline{\ ?\ }, \underline{\quad}, \underline{\quad}, \underline{\ 4\ }, \underline{\ 12\ }, \underline{\ 48\ }$$

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

Vraag 17

'n Lys van 6 getalle word gevorm deur met twee syfers te begin. Elke nuwe getal in die lys is die produk van die vorige twee syfers. Wat is die eerste getal as die laaste drie getalle hieronder gewys word.

$$\underline{\ ?\ }, \underline{\quad}, \underline{\quad}, \underline{\ 4\ }, \underline{\ 12\ }, \underline{\ 48\ }$$

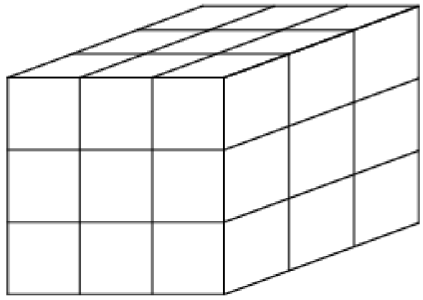
(**A**) $\frac{9}{4}$ (**B**) $\frac{4}{9}$ (**C**) $\frac{3}{4}$ (**D**) $\frac{4}{3}$ (**E**) 1

Question 18

Each corner cube is removed from this 3 cm × 3 cm × 3 cm cube. What is the surface area of the new figure?

Vraag 18

Elke hoek blokkie van 'n 3 cm × 3 cm × 3 cm kubus word verwyder. Wat is die buite oppervlak van die nuwe figuur?



(**A**) 30 cm^2 (**B**) 42 cm^2 (**C**) 48 cm^2 (**D**) 54 cm^2 (**E**) 72 cm^2

Question 19

Next year, Thabo will be a quarter of the age of his mum. Two years ago, Thabo was half the age of his cousin Joe. How old is Thabo's mom now, if Joe is 13 next year?

Vraag 19

Thabo is volgende jaar 'n kwart van sy ma se ouderdom. Twee jaar gelede was hy die helfte van sy neef Joe se ouderdom. Hoe oud is sy ma nou as Joe volgende jaar 13 word?

(**A**) 29 (**B**) 31 (**C**) 33 (**D**) 35 (**E**) 37

Question 20

Nxolo can afford to buy either 6 cans of coke and 7 chocolates or 8 cans of coke and 4 chocolates. Both options will leave her with no change whatsoever. If Nxolo decides to only buy chocolates, how many chocolates chould she afford?

Vraag 20

Nxolo het genoeg geld om óf 6 blikkies coke en 7 sjokolades te koop, óf 8 blikkies coke en 4 sjokolades. In albei gevalle, sal sy geen geld oorhê nie. As Nxolo net sjokolades koop, hoeveel sjokolades kan sy bekostig?

(**A**) 12 (**B**) 13 (**C**) 14 (**D**) 15 (**E**) 16