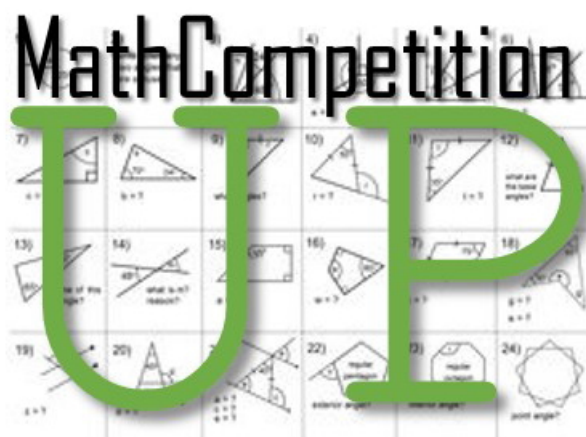


Math Competition

UJEP



Department of Mathematics and Applied
Mathematics
Departement Wiskunde en Toegepaste Wiskunde

GRADES 6 AND 7

GRADE 6 EN 7

AUGUST 2016

AUGUSTUS 2016

TIME: 2 HOURS

TYD: 2 URE

©2012 OUTEURSREG VOORBEHOU, UNIVERSITEIT VAN PRETORIA
©2012 COPYRIGHT RESERVED, UNIVERSITY OF PRETORIA



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 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**

$$20 - 16 + 201 - 6 =$$

- (A) 198 (B) 199 (C) 200 (D) 201 (E) 202
-

Question 2**Vraag 2**

Which one of the following numbers is the biggest?

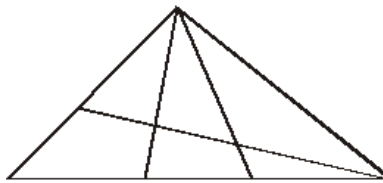
Watter een van die volgende getalle is die grootste?

- (A) $\frac{1}{2} \times 24$ (B) $\frac{1}{3} \times 39$ (C) $\frac{1}{4} \times 60$ (D) $\frac{1}{5} \times 50$ (E) $\frac{1}{6} \times 84$
-

Question 3**Vraag 3**

How many different triangles (of all sizes) are there in this figure?

Hoeveel verskillende driehoeke (van alle groottes) is daar in hierdie figuur?



- (A) 9 (B) 11 (C) 13 (D) 15 (E) 17
-

Question 4**Vraag 4**

The price of a chocolate is R13, 80. If Alan buys two chocolates with a R50 note, how much change should he get?

Die prys van 'n sjokolade is R13, 80. As Alan twee sjokolades koop met 'n R50 noot, hoeveel kleingeld moet hy kry?

- (A) R20, 40 (B) R21, 40 (C) R22, 40 (D) R23, 40 (E) R36, 20
-

Question 5**Vraag 5**

How many whole numbers between 1 and 100 is a multiple of 7?

Hoeveel heelgetalle tussen 1 en 100 is 'n veelvoud van 7?

- (A) 6 (B) 8 (C) 10 (D) 12 (E) 14
-

Question 6

Thabo notices the time is 22:22 on a digital clock. How many minutes must he wait for midnight?

- (A) 98 (B) 108 (C) 128 (D) 138 (E) 178
-

Vraag 6

Thabo sien dat die tyd op 'n digitale horlosie 22:22 is. Hoeveel minute moet hy wag vir middernag?

Question 7

The length and width of a rectangle are both doubled to form a new rectangle. The ratio of the old rectangle's area and perimeter to the new rectangle's area and perimeter is

- (A) Area 1:4 and perimeter 1:3 (A) Oppervlakte 1:4 en omtrek 1:3
(B) Area 1:3 and perimeter 1:4 (B) Oppervlakte 1:3 en omtrek 1:4
(C) Area 1:2 and perimeter 1:4 (C) Oppervlakte 1:2 en omtrek 1:4
(D) Area 1:4 and perimeter 1:2 (D) Oppervlakte 1:4 en omtrek 1:2
(E) Area 1:2 and perimeter 1:2 (E) Oppervlakte 1:2 en omtrek 1:2
-

Vraag 7

Die lengte en breedte van 'n reghoek word beide verdubbel om 'n nuwe reghoek te vorm. Die verhouding van die ou reghoek se oppervlakte en omtrek tot die nuwe reghoek se oppervlakte en omtrek is

Question 8

Which of these numbers are the closest to 8?

- (A) 7,963 (B) 8,034 (C) 7,956 (D) 8,123 (E) 8,029
-

Vraag 8

Watter van hierdie getalle is die naaste aan 8?

Question 9

Hanlie writes down six numbers that have an average of 60. She then erases one of these numbers. The average of the remaining five is 50. What number did Hanlie erase?

- (A) 50 (B) 55 (C) 60 (D) 100 (E) 110
-

Vraag 9

Hanlie skryf ses getalle neer met 'n gemiddelde van 60. Sy vee een van die getalle uit sodat die gemiddeld van die oorblywende vyf getalle 50 is. Watter getal het Hanlie uitgevee?

Question 10

A dress in Vecepia's shop is priced R1000. The next day, she increases the price by 10%. Worried, that the dress might not sell, she decides to decrease the price by 20%. What is the price of the dress now?

- (A) R880 (B) R890 (C) R900 (D) R750 (E) R700
-

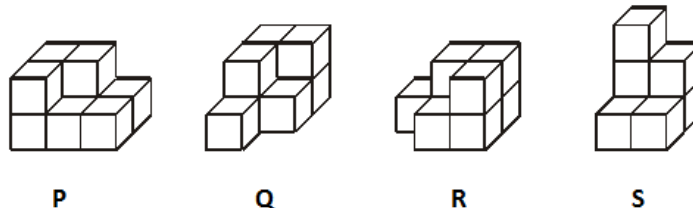
Question 11

Which fraction should replace the Δ to make the following equation true?
$$\frac{2017}{2016} \div \Delta = \frac{2016}{2015}$$

- (A) $\frac{2016 \times 2016}{2015 \times 2017}$ (B) $\frac{2017 \times 2015}{2016 \times 2016}$ (C) $\frac{2015}{2017}$ (D) $\frac{2017}{2015}$ (E) $\frac{2017 + 2016}{2016 + 2015}$
-

Question 12

Which TWO of these figures below can be placed together to form a rectangular block?



- (A) $P + R$ (B) $Q + S$ (C) $Q + R$ (D) $P + S$ (E) $R + S$
-

Question 13

Jack has three times as many sisters as brothers. His sister Jill has twice as many sisters as brothers. How many children are there in the family?

- (A) 7 (B) 9 (C) 11 (D) 13 (E) 15
-

Vraag 10

'n Rok in Vecepia se winkel kos R1000. Die volgende dag vermeerder sy die rok se prys met 10%. Bekommerd dat die rok nie gaan verkoop nie, besluit sy om die rok se prys te verlaag met 20%. Wat is die nuwe prys van die rok nou?

Vraag 11

Watter breuk moet die Δ vervang om die volgende vergelyking waar te maak?
$$\frac{2017}{2016} \div \Delta = \frac{2016}{2015}$$

Vraag 12

Watter TWEE van die figure hieronder kan saam gevoeg word om 'n reghoekige blok te vorm?

Vraag 13

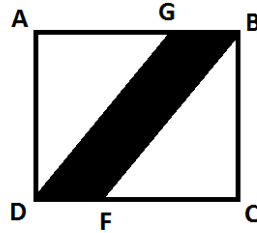
Jack het drie keer soveel susters as broers. Sy suster Jill het twee keer soveel susters as broers. Hoeveel kinders is daar in die familie?

Question 14

In the rectangle below $AB = CD = 5\text{ m}$, $AD = BC = 4\text{ m}$ and $BG = DF = 2\text{ m}$. What is the area of parallelogram $DGBF$?

Vraag 14

In die reghoek hieronder is $AB = CD = 5\text{ m}$, $AD = BC = 4\text{ m}$ en $BG = DF = 2\text{ m}$. Wat is die oppervlakte van parallel-ogram $DGBF$?



- (A) 7 m^2 (B) 8 m^2 (C) 9 m^2 (D) 10 m^2 (E) 11 m^2
-

Question 15**Vraag 15**

$$676 \times 767 =$$

- (A) 518 492 (B) 518 494 (C) 518 496 (D) 518 497 (E) 518 498
-

Question 16

The shadow of a 2 m stick is 1,5 m. At the same time a tree has a shadow of 48 m. How tall is the tree?

Vraag 16

Die skaduwee van 'n 2 m stok is 1,5 m. Op dieselfde tydstop is daar 'n boom wat 'n skaduwee van 48 m het. Hoe lank is die boom?

- (A) 24 m (B) 36 m (C) 42 m (D) 64 m (E) 72 m
-

Question 17

One hectare or 1 ha is $10\,000\text{ m}^2$. If a farmer has a piece of land in the shape of a rectangle, 4 km long and 5 km wide, how many hectare is it?

Vraag 17

Een hektaar of 1 ha is $10\,000\text{ m}^2$. As 'n boer 'n stuk grond in die vorm van 'n reghoek van 4 km lank en 5 km wyd het, hoeveel hektaar is dit?

- (A) 20 ha (B) 200 ha (C) 2 000 ha (D) 20 000 ha (E) 200 000 ha
-

Question 18

There are 600 seats in a row. What is the fewest number of seats that must be occupied so that the next person to be seated must sit next to someone?

- (A) 100 (B) 200 (C) 300 (D) 400 (E) 500
-

Question 19

Themba places 500 hats in 200 boxes, so that each box either has 1 or 2 or 3 hats in it. If 40 boxes contains one hat each, how many boxes contain 3 hats each?

- (A) 120 (B) 130 (C) 140 (D) 150 (E) 160
-

Question 20

There are 9 cards numbered 1 to 9. Four people A, B, C and D each collect two of them.

A says: The sum of my numbers is 6.
B says: The difference between my numbers is 5.
C says: The product of my numbers is 18.
D says: One of my numbers is twice the other.

What is the number on the card that belongs to nobody?

- (A) 5 (B) 6 (C) 7 (D) 8 (E) 9
-

Vraag 18

Daar is 600 sitplekke in 'n ry. Wat is die kleinste aantal sitplekke wat gevul moet wees, sodat as 'n volgende persoon opdaag, hy langs iemand moet sit?

- (D) 400 (E) 500
-

Vraag 19

Themba het 500 hoede in 200 kartonbokse ingepak sodat elke boks 1 of 2 of 3 hoede bevat. As 40 bokse een hoed elk bevat, hoeveel bokse bevat 3 hoede?

- (D) 150 (E) 160
-

Vraag 20

Nege kaarte word van 1 tot 9 genommer. Vier persone A, B, C en D trek twee kaarte elk.

A sê: Die som van my getalle is 6.
B sê: Die verskil tussen my getalle is 5.
C sê: Die produk van my getalle is 18.
D sê: Een van my getalle is dubbel die ander getal.

Watter getal is op die kaart wat aan niemand behoort nie?

- (E) 9
-