UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

UP MATHEMATICS COMPETITION

Department of Mathematics and Applied Mathematics

Departement Wiskunde en Toegepaste Wiskunde

GRADES 6 AND 7 **GRADE 6 EN 7**

26 July – 1 Aug 2021 26 July – 1 Aug 2021

TIME: 2 HOURS TYD: 2 URE

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Leading Minds

Question 1

$12 + 34 \times 5 - 67 =$

Vraag 1

$12 + 34 \times 5 - 67 =$

(A) 114 **(B)** 115 **(C)** 116 **(D)** 117 **(E)** 118

Question 2

Which one of the following fractions is also equal to $\frac{28}{1+7}$?

Vraag 2

Watter een van die volgende breuke is ook gelyk aan $\frac{28}{1+7}$?

(A) $\frac{28}{7}$ **(B)** $\frac{14}{7}$ **(C)** $\frac{7}{8}$ **(D)** $\frac{7}{4}$ **(E)** $\frac{7}{2}$

Question 3

There are 32 children in a class. How many boys are there in the class if the ratio of boys to girls is $5 : 3$?

Vraag 3

Daar is 32 kinders in 'n klas. Hoeveel seuns is in die klas, as die verhouding van seuns tot meisies $5 : 3$ is?

(A) 16 **(B)** 12 **(C)** 20 **(D)** 8 **(E)** 15

Question 4

What number is exactly halfway between $\frac{1}{3}$ and $\frac{3}{7}$?

Vraag 4

Watter getal is presies halfpad tussen $\frac{1}{3}$ en $\frac{3}{7}$?

(A) $\frac{1}{3}$ **(B)** $\frac{5}{21}$ **(C)** $\frac{6}{21}$ **(D)** $\frac{17}{42}$ **(E)** $\frac{8}{21}$

Question 5

A prime number has exactly two different positive factors: one and itself. Which one of the following numbers is NOT a prime number?

Vraag 5

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

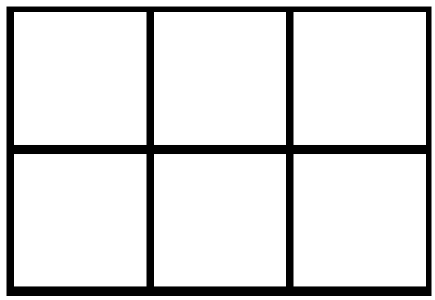
(A) 53 **(B)** 57 **(C)** 59 **(D)** 61 **(E)** 67

Question 6

A floor is tiled, using square tiles of dimensions 45 cm by 45 cm. How many tiles are needed to tile a rectangular floor of 3.15 m by 4.5 m?

Vraag 6

'n Vloer word geteel met vierkantige teëls met afmetings 45 cm by 45 cm. Hoeveel teëls is nodig om 'n reghoekige vloer van 3.15 m by 4.5 meter te teel?



(**A**) 60 (**B**) 65 (**C**) 70 (**D**) 75 (**E**) 80

Question 7

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

Vraag 7

Watter heelgetal word deur die by in die vergelyking hieronder voorgestel?

$$2021 - 211 = 1202 - 12 +$$

(**A**) 600 (**B**) 610 (**C**) 620 (**D**) 630 (**E**) 640

Question 8

If the area of a square is 121 cm^2, what is the perimeter?

Vraag 8

As die oppervlakte van 'n vierkant 121 cm^2 is, wat is die omtrek ?

(**A**) 22 (**B**) 33 (**C**) 44 (**D**) 121 (**E**) 242

Question 9

Brenda wrote down four numbers that had an average of 70. She then wrote another number so that the new average was 80. What new number did Brenda write down?

Vraag 9

Brenda het vier getalle neergeskryf met 'n gemiddeld van 70. Sy skryf toe 'n nuwe getal neer sodat die nuwe gemiddeld 80 is. Watter nuwe getal het Brenda neergeskryf?

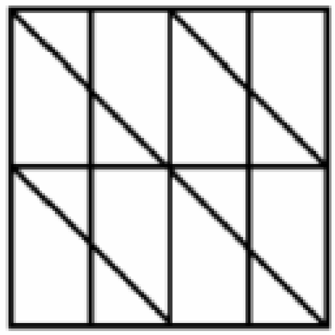
(**A**) 100 (**B**) 110 (**C**) 120 (**D**) 130 (**E**) 140

Question 10

How many trianlges are there in this figure?

Vraag 10

Hoeveel driehoeke is daar in hierdie figuur?



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

Question 11

A dam is 80 percent full. The prediction is that all dams will be 15 percent fuller after the rain season. How full is the dam after the rain season?

Vraag 11

'n Dam is 80 persent vol. Die voorspelling is dat al die damme na die reënseisoen 15 persent voller sal wees. Hoe vol is die dam na die reënseisoen?

(**A**) 80% (**B**) 90% (**C**) 91% (**D**) 92% (**E**) 95%

Question 12

What is the remainder when 2021 is divided by 9?

Vraag 12

Wat is die res as 2021 deur 9 gedeel word?

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

Question 13

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?

Vraag 13

'n Boksgeveg het twaalf rondes van 3 minute elk en daar is 'n minuut ruskans tussen elke ronde. Hoe lank hou die geveg aan as dit die volle twaalf rondes duur?

(**A**) 48 (**B**) 47 (**C**) 37 (**D**) 36 (**E**) 46

Question 14

I choose only three numbers from this number square so that you get one number from each column and one number from each row. What is the largest possible product?

Vraag 14

Ek kies slegs drie getalle uit hierdie getalvierkant sodat ek een getal uit elke kolom en een getal uit elke ry het. Wat is die grootste moontlike produk?

1	2	3
4	5	6
7	8	9

(**A**) 72 (**B**) 96 (**C**) 105 (**D**) 162 (**E**) 504

Question 15

The desks in a classroom are arranged in straight rows with the same number of desks in each row. Unless someone is absent, each desk is filled. Matt is in the second row from the front and the fourth row from the back. She is also the third learner from the left end of the row and the fifth learner from the right. How many learners are in the class?

Vraag 15

Die banke in 'n klaskamer staan in ewe lang reguit rye. Behalwe as iemand afwesig is, is al die banke gevul. Matt sit in die tweede ry van voor af en in die vierde ry van agter af. Sy is ook die derde leerling van links af en die vyfde leerling van regs af. Hoeveel leerlinge is daar in die klas?

(**A**) 48 (**B**) 35 (**C**) 30 (**D**) 24 (**E**) 42

Question 16

A palindrome is a whole number that reads the same forwards or backwards (e.g. 4774). How many palindromes are there between 10 and 500?

Vraag 16

'n Palindroom is 'n getal wat dieselfde van links en van regs lees (bv. 4774). Hoeveel palindrome is daar tussen 10 en 500?

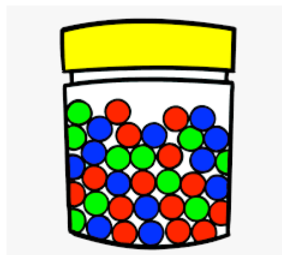
(**A**) 40 (**B**) 49 (**C**) 45 (**D**) 36 (**E**) 90

Question 17

There are 4 green marbles, 6 red marbles, 6 yellow marbles and 8 blue marbles in a container. If Devan draws a marble at random, what is the probability that the marble will not be blue?

Vraag 17

Daar is 4 groen albasters, 6 rooi albasters, 6 geel albasters en 8 blou albasters in 'n houer. As Devan willekeurig 'n albaster trek, wat is die waarskynlikheid dat die albaster nie blou sal wees nie?



(**A**) $\frac{1}{8}$ (**B**) $\frac{2}{3}$ (**C**) $\frac{7}{8}$ (**D**) $\frac{1}{2}$ (**E**) $\frac{1}{3}$

Question 18

The table represents the relationship between x and y. What is the missing number in the table?

Vraag 18

Die tabel stel die verband tussen x en y voor. Wat is die ontbrekende getal in die tabel?

x	y
2	3
3	5
4	?
6	17

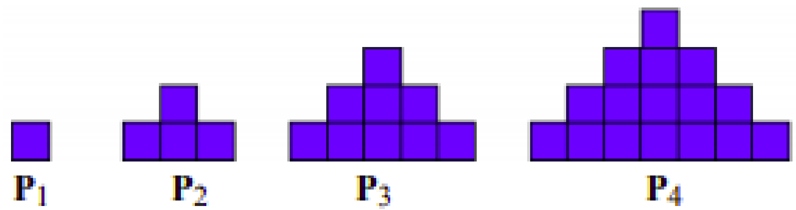
(**A**) 6 (**B**) 7 (**C**) 8 (**D**) 9 (**E**) 10

Question 19

Sipho builds "pyramids" with blocks as shown in the sketch below. How many blocks does he need to build P_{50}, that is the 50th one if the pattern continues?

Vraag 19

Sipho bou "piramides" met blokke soos in die skets getoon. Hoeveel blokke het hy nodig om P_{50} te bou, dit is die 50ste piramide as die patroon so voortgaan?



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

Question 20

We know that exactly one of the five statements below is true. Which one is true?

(A) One of these statements is false

(B) Two of these statements are false

(C) Three of these statements are false

(D) Four of these statements are false

(E) Five of these statements are false

Vraag 20

Ons weet dat presies een van die vyf bewerings hieronder waar is. Watter een is waar?

(A) Een van hierdie bewerings is onwaar

(B) Twee van hierdie bewerings is onwaar

(C) Drie van hierdie bewerings is onwaar

(D) Vier van hierdie bewerings is onwaar

(E) Vyf van hierdie bewerings is onwaar