The International Living Maths Mathletics Olympiad 2004 Grade: 6

LIVING MATHS
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PLEASE NOTE:

- Answer the questions according to the instructions on the answer sheet.
- Choose an answer from the possibilities below each problem.
- The teacher may explain the instructions to the learners.
- You may not use a calculator.
- Read the questions carefully!

We hope you enjoy it!

1. If 2^3 means 2 x 2 x 2 then how much does this equal?

(A) 2 (B) 4 (C) 6 (D) 8 (E) 10

2. A honeybee collects nectar from 100 flowers. If the total amount of nectar gathered is 25g, approximately how much nectar was gathered from each flower?

(A) 2,5g (B) 0,25g (C) 0,025g (D) 0,0025g (E) 0,0205g

3. A farmer delivers 10 boxes of peaches to a shop. Each box contains 24 peaches. The shop repacks the peaches into baskets that can only hold 6 peaches. How many baskets can be made up?

(A) 10 (B) 24 (C) 34 (D) 40 (E) 60

4. A tiny virus cell doubles in quantity every minute. At 09:00 a single cell is placed in a container and one hour later, the container becomes exactly full. At what time was the container one quarter full?

(A) 09:15 (B) 09:30 (C) 09:58 (D) 09:59 (E) 09:25

5. Calculate: 1000 + 40 + 1000 + 30 + 1000 + 20 + 1000 + 10 = ?

(A) 5000 (B) 4900 (C) 4100 (D) 4000 (E) 3900

6. A frog is at the bottom of a well that is 8m deep. When he climbs up the walls, he can climb 3m during the day but at night he slips back 2m. How many days will it take for him to climb out of the well?

(A) 6 (B) 8 (C) 7 (D) 5 (E) 7,5

7. What fraction is nearest to ⅔?

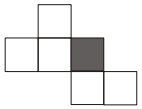
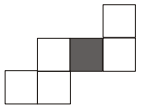
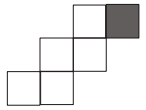
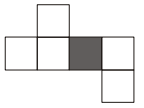
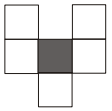
(A) $\frac{201}{301}$ (B) $\frac{2001}{3001}$ (C) $\frac{21}{31}$ (D) $\frac{210}{310}$ (E) $\frac{2010}{3010}$

8. If you type all the numbers from 0-9 on your calculator and then you turn it upside down, you will notice that the numbers form letters. Which of the following words cannot be created?

Wanneer jy al die syfers van 0-9 op jou sakrekenaar tik en die sakrekenaar onderste-bo draai, sal jy oplet dat die syfers na letters verander. Watter van die volgende woorde kan nie verkry word nie?

(A) ShELLS (B) gLOBES (C) gLOSS (D) SLABS (E) BLESS

9. Which one of the following figures below cannot be folded along the lines to form a cube with the shaded square as the base?
Watter van die volgende onderstaande figure kan nie gevou word volgens die lyne om 'n kubus te vorm met die ingekleurde deel as die basis nie?

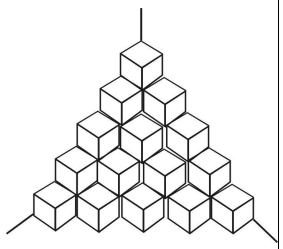
(A)  (B)  (C)  (D)  (E) 

10. What is the units digit of the product 23 x 15 x 71?
Wat is die ene-plekwaarde van die produk van 23 x15 x 71?

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

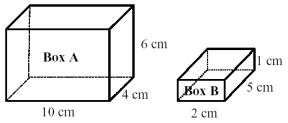
11. Millie takes a whole bunch of building blocks and stacks them in the corner of her room as seen in the diagram on the right. How many blocks were used to build this structure?

Millie vat 'n klomp boublokkies en stapel dit in die hoek van haar kamer soos gesien in die regterkantse diagram. Hoeveel boublokkies was nodig om die struktuur te bou?



(A) 35 (B) 40 (C) 32 (D) 28 (E) 25

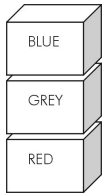
12. What is the maximum number of Box B's that can fit exactly into Box A?
Wat is die maksimum aantal van Boks B wat presies in Boks A kan inpas?



(A) 12 (B) 16 (C) 20 (D) 24 (E) 28

13. Three cubes of equal size are stacked one on top of the other. There is a blue one, a grey one and a red one. How many different ways can you stack the blocks upon one another?

Drie ewe groot kubusse staan bo-op mekaar. Daar is 'n bloue, 'n gryse en 'n rooie. Op hoeveel verskillende maniere kan jy die bokse bo-op mekaar pak?



(A) 3 (B) 6 (C) 9 (D) 8 (E) 4

14. The diagram below shows the first four triangles in a pattern. How many dots would you count in the 7th triangle?

Die diagram hieronder wys die eerste vier driehoeke in 'n patroon. Hoeveel kolletjies kan jy tel in die 7de driehoek?

(A) 36 (B) 21 (C) 28 (D) 32 (E) 40

15. Which number lies exactly halfway between 4,862 and 5,862 ?
Watter nommer lê presies halfpad tussen 4,862 en 5,862 ?

(A) 5,362 (B) 4,362 (C) 4,5 (D) 4,431 (E) 4,462

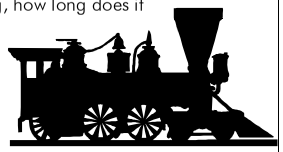
16. What is the value of A + B + C + D if:
Wat is die waarde van A + B + C + D as:

A x B = 18
B x C = 24
C x D = 36
A x D = 27
B – C = 2

(A) 26 (B) 33 (C) 27 (D) 30 (E) 22

17. A train, 1 km in length, travels at 60 km/h through a tunnel. If the tunnel is 1km long, how long does it take for the entire train to travel through the tunnel?

'n Trein, wat 1km lank is, reis teen 60km/h deur in tonnel. As die tonnel 1km lank is, hoe lank sal dit die hele trein neem om deur die tonnel te ry?



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

18. Allie painted the word **SHIRTS** on the window of his clothing shop. Viewed from the other side of the window, how would it look?

Allie verf die woord **SHIRTS** op 'n klerewinkelvenster. Hoe sal dit lyk vir die mense aan die anderkant van die venster?

A SHIRTS B STHIRS C STRIHS D STHRIS E SIRTHS

19. The digits of a three-digit number add up to 25. How many such three-digit numbers are possible?
Die syfers van 'n drie-syfergetal is gelyk aan 25. Hoeveel van sulke drie-syfergetalle is moontlik?

(A) 2 (B) 8 (C) 4 (D) 6 (E) 10

20. You are running in a race. If you overtake the person coming second, what is your position in the race?
Jy neem deel in 'n wedloop. As jy die persoon wat tweede lê verbysteek, wat is jou posisie in die wedloop?

(A) First (B) Second (C) Third (D) Fourth (E) Last

21. @ is a maths operation that gives the following results:
@ is 'n wiskundige bewerking om die volgende resultate te kry:

2 @ 6= 17 3 @ 7 = 26
4 @ 9 = 41 5 @ 3 = 20

What is the result of 7 @ 7 ?
Wat is die resultaat van 7 @ 7 ?

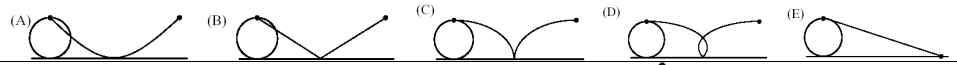
(A) 51 (B) 52 (C) 53 (D) 54 (E) 55

22. A farmer has some chickens and some cows. If there are 50 heads and 162 legs, how many cows does she have?
'n Boer het hoenders en 'n paar koeie. As daar 50 koppe is en 162 bene, hoeveel koeie het sy?

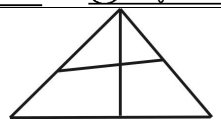
(A) 25 (B) 19 (C) 31 (D) 20 (E) 40.5

23. In the picture below, a coin is rolled along the surface of a table without sliding. Which of the diagrams below best describe the path?

In die prent hieronder word 'n munstuk gerol op 'n tafel sonder om te val. Watter van die onderstaande diagramme beskryf die pad die beste?



24. How many triangles are there in the figure on the right?
Hoeveel driehoeke is in die figuur aan die regterkant?



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

25. The notation A $ B will give you the remainder when A is divided by B. For example, 17 $ 4 = 1. Calculate 23 $ (23 $ 9)

Die notasie A $ B sal vir jou die res gee as A deur B deel. Byvoorbeeld:17 $ 4 = 1. Bereken 23 $ (23 $ 9)

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

Papers written by Steve Sherman and translated by Maryna de Lange