



CYPRUS MATHEMATICAL SOCIETY

8th CYPRUS MATHEMATICAL OLYMPIAD

April 2007

TIME: 60 MINUTES

4th GRADE - D' Demotikou

1. Find the answer.

$$0,9 \times (0,4 + 0,6) =$$

- A. 0,9 B. 9 C. 1,9 D. 0,09 E. 1
-

2. John multiplied a number by 10 instead of dividing it by 10. He obtained the result 100. What would have been the correct result if he hadn't done this mistake?

- A. $\frac{1}{10}$ B. 1 C. 10000 D. 100 E. 1000
-

3. There are some pupils on a school bus. At the first bus stop 3 pupils get off the bus and 7 get in. At the second bus stop Maria and her 2 little cousins get off the bus. The remaining 12 pupils that are still on the bus leave at the third bus stop. How many were the pupils before the first bus stop?

- A. 10 B. 11 C. 12 D. 13 E. 14
-

4. The digit * in the following sum is equal to:

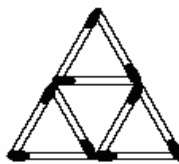
$$\begin{array}{r} 1 \quad * \quad 2 \quad * \\ + \quad 3 \quad * \quad 4 \quad * \\ \hline 5 \quad 4 \quad * \quad 4 \end{array}$$

- A. 1 B. 2 C. 6 D. 7 E. 9
-

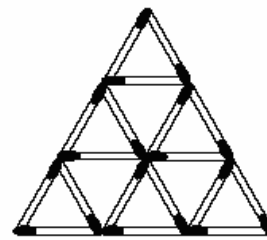
5. How many matchsticks will you need to construct the fourth shape in the row?



First shape



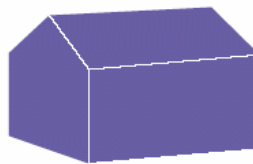
Second shape



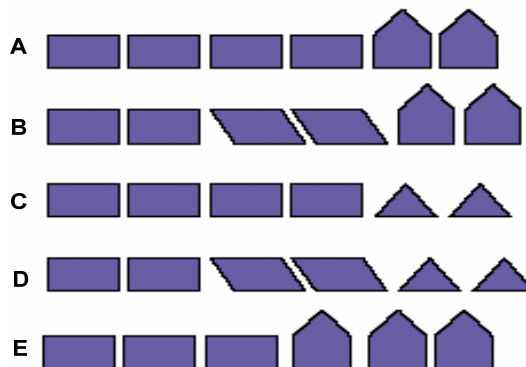
Third shape

- A. 9 B. 18 C. 30 D. 42 E. 45**

6. Peter built a model of a small house. The small house had no floor and no doors.



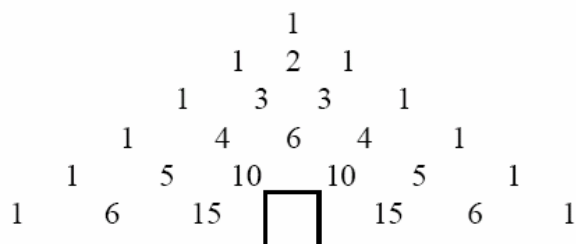
Which of the following shows the shapes that Peter used to build the house?



7. $\frac{1+2+3+4}{1 \times 2 \times 5}$ equals

- A. 0** **B. 1** **C. 2** **D. 3** **E. 4**

8. What is the missing number in the square?



- A. 5 B. 20 C. 21 D. 10 E. 25

9. If you multiply $11 \times 13 \times 15$, what is the units digit of the product?

- A. 1 B. 3 C. 5 D. 7 E. 9

10. What is the result of the following operations?

$$0,3 \times 0,4 + 0,3 \times 0,9$$

11. How many different 4-digit numbers can be constructed using the digits 1, 2, 3 and 4, if each digit is only used once in each number?

- A. 4 B. 8 C. 20 D. 12 E. 24

12. Nikos and Niki had $1\frac{1}{2}$ chocolates to divide evenly between them. What part of the chocolate does each one get?

- A. $\frac{5}{8}$ B. $1\frac{1}{4}$ C. $\frac{3}{4}$ D. $\frac{1}{4}$ E. $\frac{1}{2}$

13. The length of a rectangle is 64 cm and its width is 4 cm. Which of the following squares has the same area as the rectangle?

- A. Square with a side of 8 cm B. Square with a side of 2 cm
C. Square with a side of 256 cm D. Square with a side of 12 cm
E. Square with a side of 16 cm

14. If $(4 \times \alpha) - 22 = 46$, find the value of α ;

- A. 6 B. 16 C. 17 D. 22 E. 68

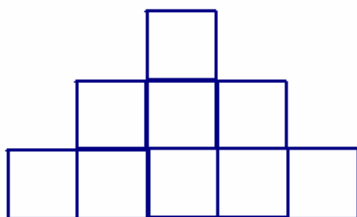
15. If the volume of a cube is 512 cm^3 , then the side of the cube is:

- A. 16 cm B. 256 cm C. 128 cm D. 8 cm E. 4 cm

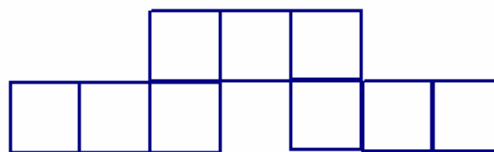
16. There are 78 seats in a bus. The bus leaves the station empty and takes one passenger from the first bus stop, two passengers from the second bus stop, three from the third bus stop etc. If no passenger gets off the bus, after how many bus stops will the bus be full?

- A. 5 B. 8 C. 12 D. 13 E. 10

17. Shapes A and B have the same area. The perimeter of shape A is 48 cm. What is the perimeter of shape B? (The small shapes like this one , are squares).



A



B

- A. 48 B. 60 C. 50 D. 80 E. 10

18. A, B and C are different numbers. If
$$\begin{array}{r} A \\ B + \\ \hline \Gamma \\ AB \end{array}$$
, what is the value of C?

- A. 9 B. 2 C. 1 D. 8 E. 0

19. Which one of the following statements is **false**?

- A.** $28 \div 7 > 3 \times 1$
B. $9 \times 6 < 7 \times 8$
C. $8 \times 0 < 7 \div 7$
D. $63 \div 7 > 64 \div 8$
E. $48 \div 6 < 36 \div 9$

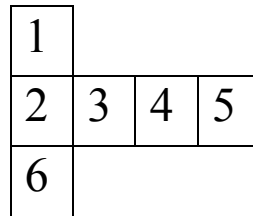
B. $9 \times 6 < 7 \times 8$

C. $8 \times 0 < 7 \div 7$

D. $63 \div 7 > 64 \div 8$

E. $48 \div 6 < 36 \div 9$

20. If the figure below is folded, it becomes a cube. Which number will be on the bottom of the cube, if 5 is on the top of the cube?



- A.** 1 **B.** 2 **C.** 3 **D.** 4 **E.** 6

21. In the subtraction shown, M and N each represent a single digit. What is the value of $M + N$?

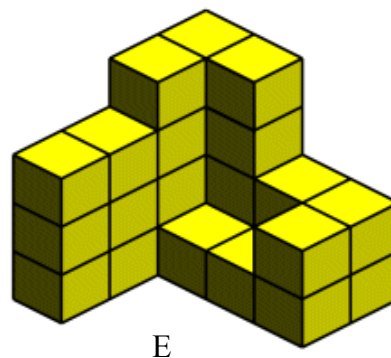
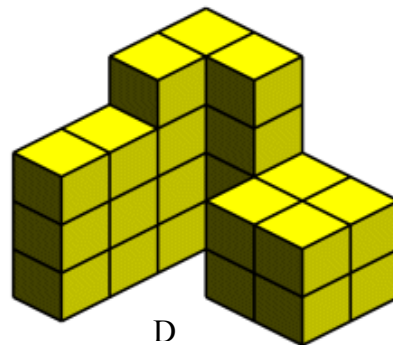
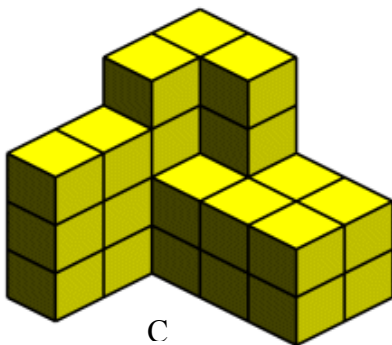
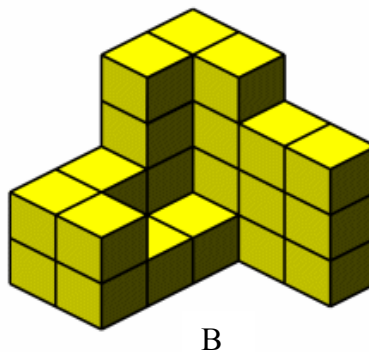
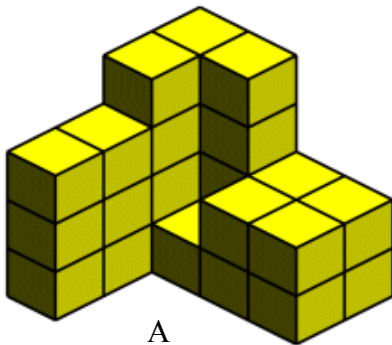
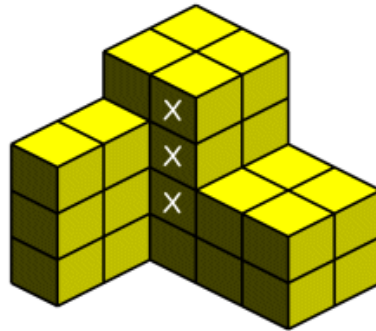
$$\begin{array}{r} M4 \\ - 3N \\ \hline 16 \end{array}$$

- A.** 14 **B.** 12 **C.** 15 **D.** 13 **E.** 11

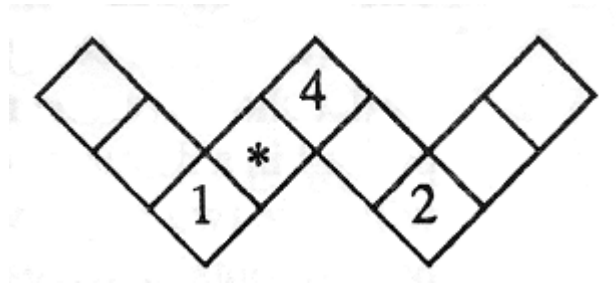
22. What is the value of:
 $268 + 1375 + 6179 - 168 - 1275 - 6079 =$

- A.** 300 **B.** 0 **C.** -100 **D.** 100 **E.** -300

23. If I from the construction below I remove the three cubes indicated with X, which one of the following will be the new construction created?

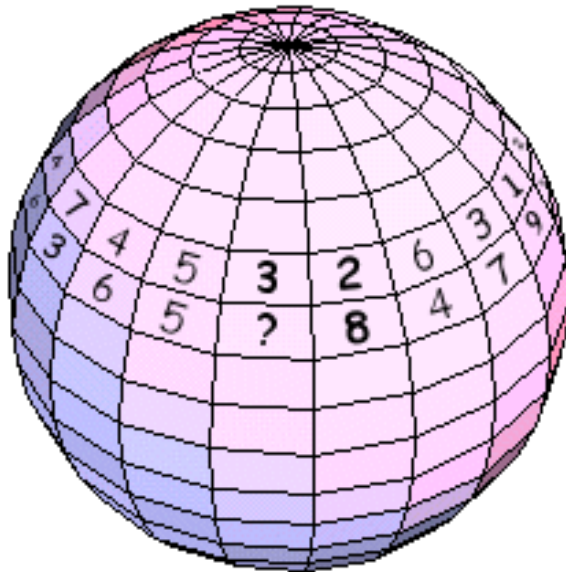


- 24.** The digits from 1 to 9 inclusive are to be placed in the figure shown below. Only one digit goes in every square. If the sum in each of the four lines is the same which digit should replace *?



- A. 8 B. 5 C. 9 D. 6 E. 7

- 25.** Which is the missing number in the shape below;



- A. 1 B. 3 C. 5 D. 7 E. 9

- 26.** Find the value of X.

$$(999+999+999+999+999) \div 999 = 9 - X$$

- A. 3 B. 4 C. 5 D. 6 E. 7

27. $100 + 0,01 - 0,001 =$

- A. 100,09 B. 100,9 C. 99,09 D. 100,009 E. 100

28. Sixteen is called a square number, because $16 = 4 \times 4$. How many square numbers are there between 2 and 101?

- A. 7 B. 8 C. 9 D. 10 E. 11

29. Aunt Anna is 42 years old. Eleni is 5 years younger than Niki, and Niki is half the age of Aunt Anna. How old is Eleni?

- A. 15 B. 16 C. 17 D. 21 E. 37

30. In Mesopotamia in 2500 B.C.,



This sign was used to represent 1,



This sign was used to represent 10 and



This sign was used to represent 60.

Thus, 22 would be written like this:



How would 124 be written?

- A B C
D E

