



Kangaroo Benjamin, answer sheet  
6th and 7th grade



MAUNULAN  
YHTEISKOULU  
Helsingin  
matematiikkalukio

NAME ..... CLASS/GROUP .....

Points .....

Kangaroo leap .....

Unfasten this answer sheet.

Write your answer under the problem number.

Leave the space empty if you do not know the answer.

It is not a good idea to guess, a wrong answer will cause a deduction of 1/4 of the max points!

Problem	1	2	3	4	5	6	7
Answer							

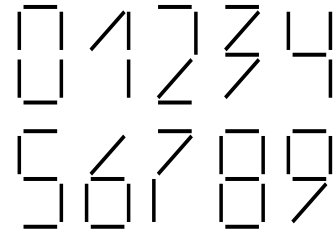
Problem	8	9	10	11	12	13	14
Answer							

Problem	15	16	17	18	19	20	21
Answer							





7. We use identical small sticks to form digits, as shown on the right. Given a number, by the *weight* of it we mean the number of sticks needed to compose it. What is the weight of the heaviest 2-digit number?

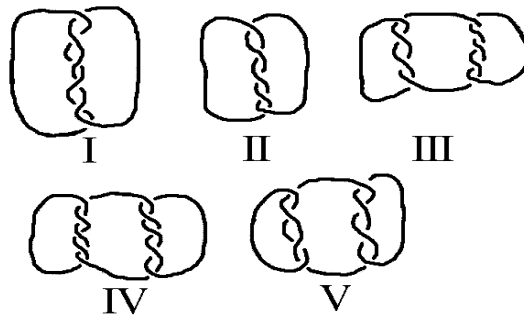


- (A) 10      (B) 11      (C) 12      (D) 13      (E) 14

#### 4-Point-Problems

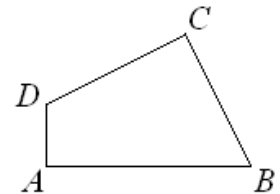
8. Which of the following links consist of more than one piece of rope?

- (A) I, III, IV and V  
(B) III, IV and V  
(C) I, III and V  
(D) all of them  
(E) none of the above



9. The quadrilateral  $ABCD$  has sides  $AB = 11$  cm,  $BC = 7$  cm,  $CD = 9$  cm and  $DA = 3$  cm and it has right angles in  $A$  and  $C$ . What is the area of this quadrilateral?

- (A)  $30 \text{ cm}^2$    (B)  $44 \text{ cm}^2$    (C)  $48 \text{ cm}^2$    (D)  $52 \text{ cm}^2$    (E)  $60 \text{ cm}^2$



10. There are 39 boys and 23 girls in the dance group. Every week 6 more boys and 8 more girls join the dance group. After a few weeks there will be the same number of boys and girls in the dance group. How many boys and girls will be then in the dance group?

- (A) 144      (B) 154      (C) 164      (D) 174      (E) 184

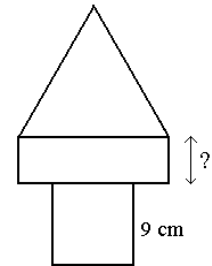
11. Eight cards numbered 1 to 8 are put in the boxes A and B, so that both sums of the card numbers in each box are equal. If there are only 3 cards in the box A, then you can be sure that

- (A) three cards in box B are odd numbered  
(B) four cards in box B are even numbered  
(C) card number one is not in box B  
(D) card number two is in box B  
(E) number 5 is in box B



12. "Tower" at the picture is formed of three structures – square, rectangle and equilateral triangle. Perimeter of all three structures is the same. Side of the square is 9 cm long. What is the length of marked side of the rectangle?

- (A) 4 cm    (B) 5 cm    (C) 6 cm    (D) 7 cm    (E) 8 cm



13. Andrija, Branimir, Celestin and Davor have won the first four places at the fencing tournament. If you add the number of places won by Andrija, Branimir and Davor, you will get number 6. You will get the same number if you add the number of places won by Branimir and Celestin. Who won the first place, if Branimir is better placed than Andrija?

- (A) Andrija                      (B) Branimir                      (C) Celestin  
(D) Davor                      (E) it's impossible to determine

14. Today is Sunday. Francis begins to read a book with 290 pages. He reads 4 pages each day, except on Sundays, when he always reads 25 pages, without jumping any day. How many days it took him to read the book?

- (A) 5                      (B) 46                      (C) 40                      (D) 35                      (E) 41

### 5-Point-Problems

15. There are 4 statements about the positive integer A:

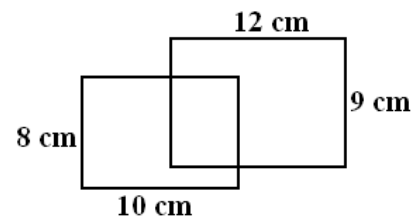
- A is divisible by 5
- A is divisible by 11
- A is divisible by 55
- A is less than 10

It is known that two of these statements are true, and the other two are false. Then A is equal to:

- (A) 0                      (B) 5                      (C) 10                      (D) 11                      (E) 55

16. Two rectangles of  $8 \text{ cm} \times 10 \text{ cm}$  and  $9 \text{ cm} \times 12 \text{ cm}$  partly cover each other. The smaller rectangle has an area of  $37 \text{ cm}^2$  outside the larger one. What area of the larger rectangle is outside the smaller one?

- (A)  $60 \text{ cm}^2$                       (B)  $62 \text{ cm}^2$                       (C)  $62,5 \text{ cm}^2$   
(D)  $64 \text{ cm}^2$                       (E)  $65 \text{ cm}^2$





17. The rooms of a hotel are numbered with three digits. The first indicates the floor and the following two the number of the room. For example, 125 indicates room 25 of the first floor. If the hotel has a total of 5 floors numbered from 1 to 5 with 35 rooms per floor numbered from 101 to 135 on the first floor, how many times will the digit 2 be used to number all the rooms?

- (A) 60                      (B) 65                      (C) 95                      (D) 100                      (E) 105

18. We want to colour the squares in the grid using colours  $A$ ,  $B$ ,  $C$  and  $D$  in such a way that neighbouring squares do not have the same colour (squares that share a vertex are considered neighbours). Some of the squares have been coloured as shown. What are the possibilities for the shaded square?

A	B		C	D

- (A) only  $A$                       (B) only  $B$                       (C) only  $C$   
(D) only  $D$                       (E) there are two different possibilities

19. The total of each row and column is given. What is the value of  $\square + \otimes - \triangle$  ?

- (A) 4                      (B) 5                      (C) 6                      (D) 7                      (E) 8

$\square$	$\otimes$	$\square$	11
$\otimes$	$\square$	$\triangle$	8
$\otimes$	$\triangle$	$\square$	8
10	8	9	

20. In the land of Funnyfeet, everybody has the left foot one or two sizes bigger than the right foot. Nevertheless shoes are sold in pairs of the same size. To save, a group of friends decide to buy shoes together: each one takes two shoes, and a shoe of size 36 and one of size 45 are left over. We can say that the minimum number of people in the group is

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

21. In a  $4 \times 2$  table, two numbers are written in the first row. Each next row contains the sum and the difference of the numbers written in the previous row (see the picture for an example). In a table  $7 \times 2$ , filled in the same way, the numbers of the last row are 96 and 64. What is the sum of the numbers in the first row?

- (A) 8                      (B) 10                      (C) 12                      (D) 20                      (E) 24

10	3
13	7
20	6
26	14