Kangaroo 2018 Benjamin

(6th and 7th grade)

Maunulan yhteiskoulu
HELSINGIN MATEMATIIKKALUKIO

NAME _____ CLASS _____

Points: _____ Kangaroo leap: _____

Separate this answer sheet from the test. Write your answer under each problem number.

For each right answer you get 3, 4, or 5 points. There is exactly one correct answer for each problem.

For each wrong answer, ¼ of the points of the problem will be deducted, for example for a 4-point problem -1 point. If you leave the answer empty, no deduction will be made.

There are two goals: to get as many points as possible, or to get as many consecutive right answers as possible.

3 points

PROBLEM	1	2	3	4	5	6	7
ANSWER							

4 points

PROBLEM	8	9	10	11	12	13	14
ANSWER							

5 points

PROBLEM	15	16	17	18	19	20	21
ANSWER							

Contest not to be held before 15th of March.

Logo design by Veijo Nurminen.

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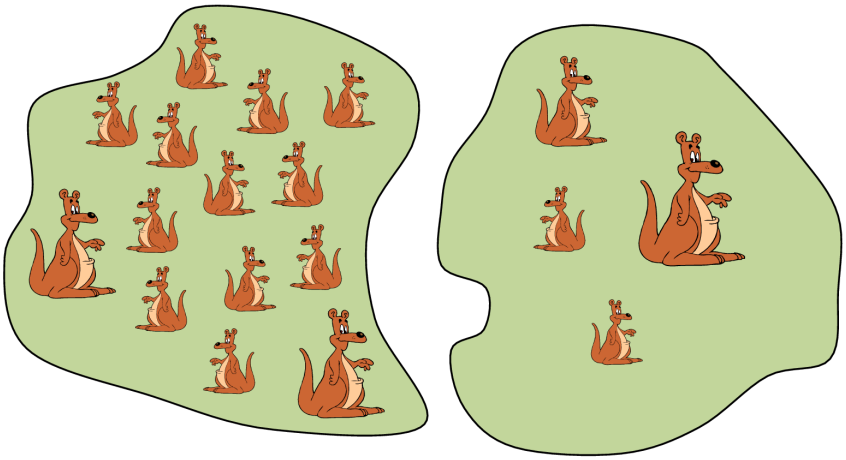
3 points

1.

How many kangaroos should jump from one park to another in order to have equally many kangaroos in both parks?



(A) 4 (B) 5 (C) 6 (D) 8 (E) 9

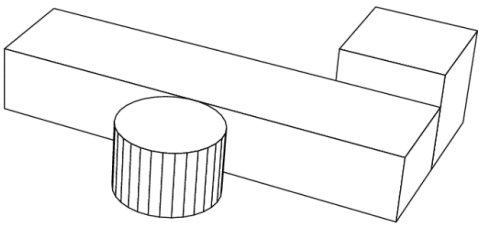
2.

Seppo is 6 years old. His sister is one year younger and his brother one is year older than him. What is the sum of the siblings' ages?

(A) 16 years (B) 17 years (C) 18 years (D) 19 years (E) 21 years

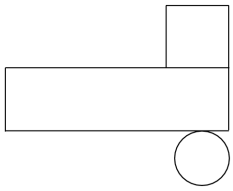
3.

There are three objects on the table.

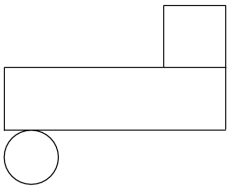


What does Viljo see if he looks at them from above?

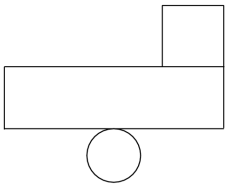
(A)



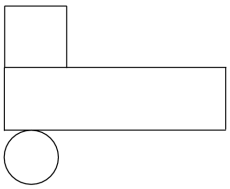
(B)



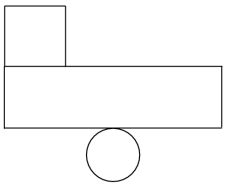
(C)



(D)



(E)



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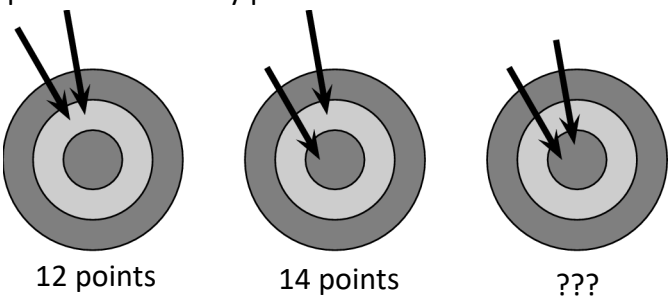
4.

Auli shot two arrows twice. The first time she scored 12 points. The second time she scored 14 points. How many points did she score the third time?



(A) 16 (B) 18 (C) 20 (D) 22 (E) 24

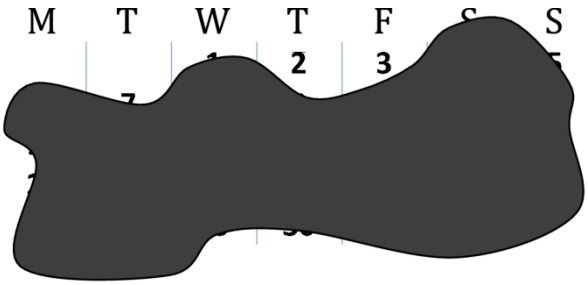
5.

Timur subtracted two 2-digit numbers. Then he painted two cells as shown in the picture. What is the sum of the two digits in the painted cells?

(A) 8 (B) 9 (C) 12 (D) 13 (E) 15

6.

The picture shows the calendar of a certain month. Unfortunately an ink spot covers most of dates. What day is the 25th of that month?



(A) Wednesday (B) Thursday (C) Friday (D) Saturday (E) Sunday

7.

How many times do we have to roll a regular 6-sided die to be sure that at least one result is repeated?

(A) 5 (B) 6 (C) 7 (D) 8 (E) 12

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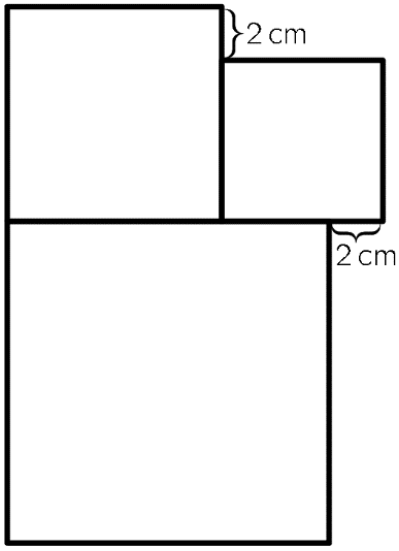
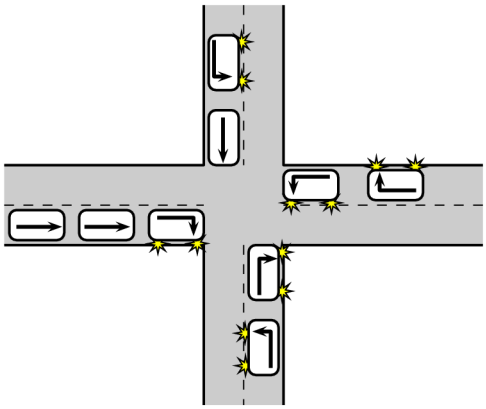
4 points

8.
There are 3 squares in the figure. The side length of the smallest square is 6 cm. What is the side length of the biggest square?

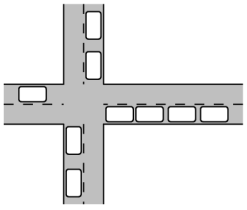


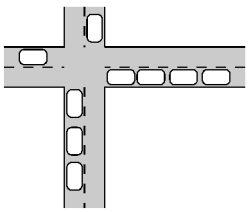
(A) 8 cm (B) 10 cm (C) 12 cm (D) 14 cm (E) 16 cm

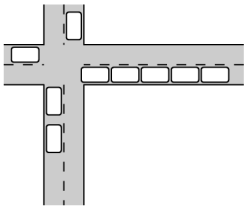
9.
Nine cars arrive at the crossroads and drive through as indicated by the arrows.

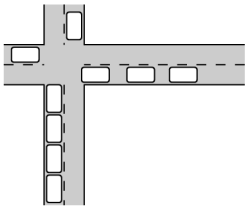


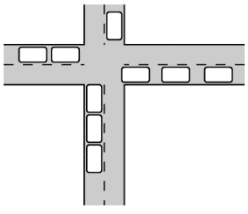
Which figure shows these cars after passing the crossroads?

(A)


(B)


(C)


(D)


(E)


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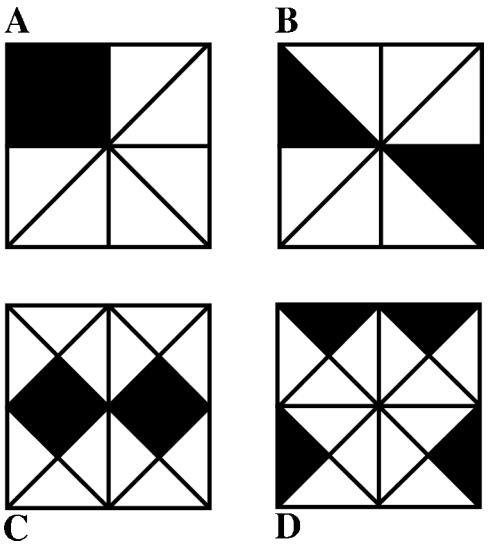
10.
In which of the four squares is the ratio of the black area the largest?



(A) A (B) B (C) C (D) D (E) The areas are all equally large.

11.
On Monday Julius shares a picture with 5 friends. For several days everybody who receives the picture, sends it the next day to two friends who haven't seen the picture yet. On which day does the number of people who have seen the picture become greater than 100?

(A) On Wednesday (B) On Thursday (C) On Friday (D) On Saturday (E) On Sunday

12.
Alina does a calculation using the digits A, B, C ja D. Which digit is represented by B?

$$\begin{array}{r} A\ B\ C \\ +\ \ C\ B\ A \\ \hline D\ D\ D\ D \end{array}$$

(A) 0 (B) 2 (C) 4 (D) 5 (E) 6

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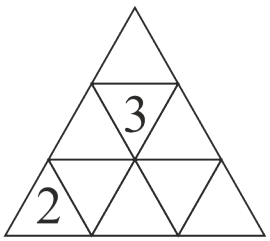
13.

A kangaroo is hidden in one of three rooms.
A note on the door of room 1 reads "The kangaroo is here".
A note on the door of room 2 reads "The kangaroo is not here".
A note on the door of room 3 reads "2 + 3 = 2 × 3".
Only one of these sentences is true. In which room is the kangaroo hidden?

(A) In room 1. (B) In room 2. (C) In room 3. (D) It may be in any room. (E) It may be in either room 1 or room 2.

14.

Kati is going to write a number into each cell of the triangular table. The cells are called neighbours whenever they have a common edge. The sum of the numbers in any two neighbours must be the same. Kati has already written two numbers. What will be the sum of all the numbers in the table when she is finished?



(A) 18 (B) 20 (C) 21 (D) 22 (E) impossible to determine

5 points

15.

Frida and Aino both have a list of numbers $1, 2, 3, 4, 5, 6, 7$. They both choose three different numbers from their own lists. The sum of the numbers Frida chose is 8 and the sum of the numbers Aino chose is 7. How many common numbers were chosen by both?

(A) none (B) 1 (C) 2 (D) 3 (E) impossible to determine

16.

The sum of the ages of Viivi and her father is 36, and the sum of the ages of her father and granny is 81. How old was her granny when Viivi was born?

(A) 28 years (B) 38 years (C) 45 years (D) 53 years (E) 56 years

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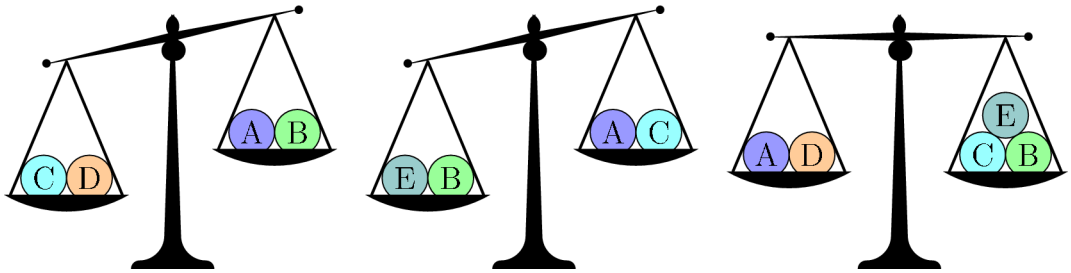
17.

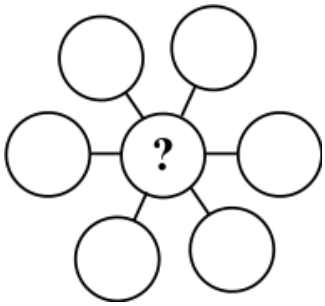
Five balls A, B, C, D and E weigh 30 g, 50 g, 50 g, 50 g and 80 g, respectively.
Which ball weighs 30 g?



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

18.

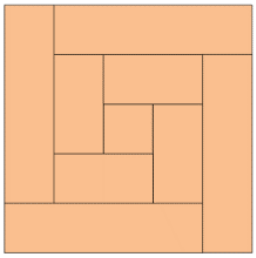
Hugo writes the numbers 3, 4, 5, 6, 7, 8 and 9 in the seven circles to obtain equal sums along each of the three lines. What is the sum of all possible numbers replacing the question mark?



(A) 3 (B) 6 (C) 9 (D) 12 (E) 18

19.

Tarmo sawed an 8 cm wide wooden shelf into 9 parts. One piece was a square, the rest were rectangles. Then he put all the pieces together as shown in the picture. How long was the shelf before the sawing?



(A) 150 cm (B) 168 cm (C) 196 cm (D) 200 cm (E) 232 cm

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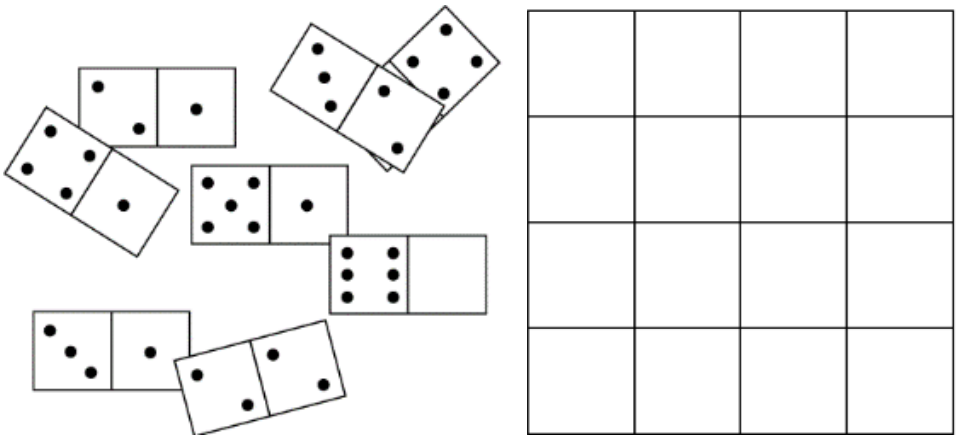
20.

Domino tile consists of two squares that both have 0-6 dots. The picture shows eight domino tiles on the table. These 8 tiles can be arranged into a 4 X 4 grid, so that the number of dots in each row and column is the same. One half of one tile is under another tile. How many dots are there on the covered part?



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

21.

14 people are seated at the round table. Each person either always lies or always tells the truth. Everybody says: ”Both my neighbours lie”. What is the maximum number of liars at the table?

(A) 7 (B) 8 (C) 9 (D) 10 (E) 14