The Mathematics Kangaroo 2004
Écolier (grades 3 or 4)
18.3.2004

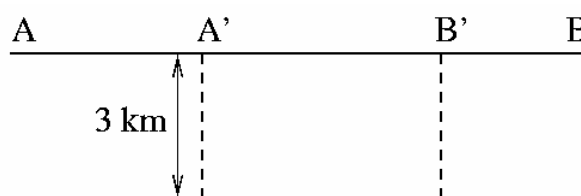**- 3-point questions -**

1) $21 + 22 + 23 = ?$

A) 56   B) 64   C) 65   D) 66   E) 76

2) Andreas was 4 years old when his sister was born. It is his 9th birthday today. What is the age difference between Andreas and his sister?

A) 4 years   B) 5 years   C) 9 years   D) 13 years   E) 14 years

3) The line from A to B on the right represents a straight road.
Between A' and B' the road is closed because of construction. How much longer is the dotted detour than the normal road?
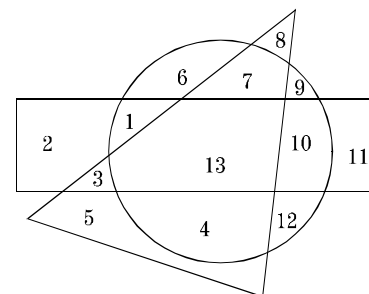

A) 3 km   B) 5 km   C) 6 km
D) 10 km   E) cannot be calculated.

4) A few birds sit on a wire. 5 of them fly away but 3 of them return shortly after. At that time 12 birds sit on the wire. How many birds were there at the beginning?

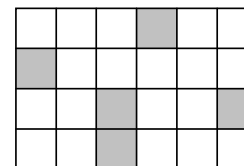A) 8   B) 9   C) 10   D) 12   E) 14

5) What numbers are inside the rectangle and the circle but not inside the triangle?

A) 5 und 11   B) 1 und 10   C) 13
D) 3 und 9   E) 6,7 und 4

6) How many squares need to be shaded to make the number of white squares equal to the number of shaded ones?
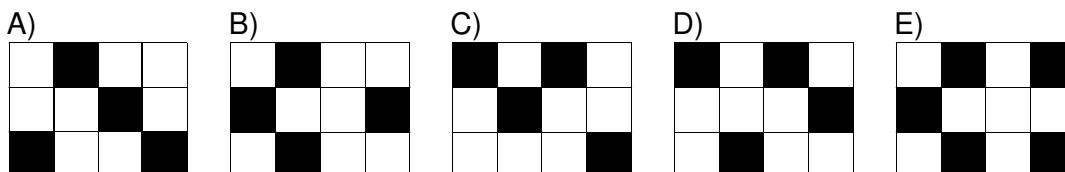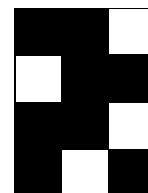
A) 6   B) 7   C) 8   D) 12   E) not possible.

7) All students of the 4a form are lined up in one row. 16 children stand behind Maria, and Norbert is one of them. 14 children stand in front of Norbert, and Maria is one of them. Between Maria and Norbert are 7 children. How many children belong to form 4a?
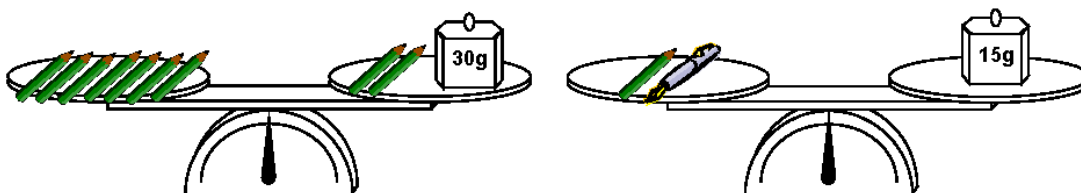
A) 37   B) 30   C) 23   D) 22   E) 16

8) Which of the rectangle A to E will become entirely black when covered with the rectangle on the right?

A)   B)   C)   D)   E)

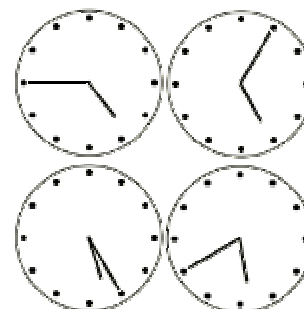- **4-point questions-**

9) What is the mass in grams of the pen on the right scale?

A) 6g   B) 7g   C) 8g   D) 9g   E) 10g

10) At a certain time 4 clocks show the time as shown on the right.
Only one clock shows the time correctly. One clock is fast by 20 minutes, one is slow by 20 minutes and one stopped. What was the correct time
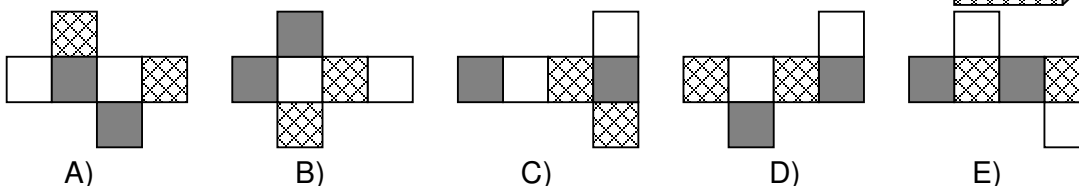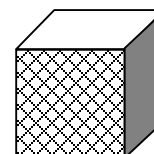
A) 4:45 h   B) 5:05 h   C) 5:25 h   D) 5:40 h
E) can not be determined.

11) Gabi gave Seppi a basket with the same number of oranges and apples. Seppi ate half the apples and a third of the oranges. What part of the fruits are still in the basket?

A) half   B) more than half   C) a third
D) less than one half, but more than one third   E) less than a third

12) Each of the figures below consists of 6 squares. By cutting the figure and folding appropriately each figure can be made into a cube. Which figure will yield a cube with opposite sides of the same color?

A)   B)   C)   D)   E)

13) Karin found an old book with several pages missing. Opening the book she saw page 24 on the left and page 45 on the right. How many sheets are missing?

A) 9   B) 10   C) 11   D) 20   E) 21

14) Julia and Tanja are born in the same year, and Julia is 52 days older than Tanja. This year Julia's birthday is on a Tuesday. What day of the week will be Tanja's birthday?

A) Monday   B) Tuesday   C) Wednesday   D) Thursday   E) Friday

15) Which calculation yields the same result as 671 – 389?

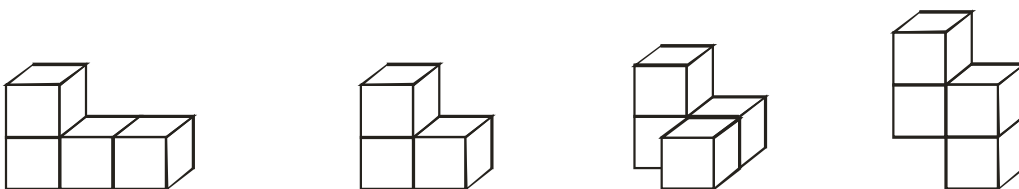A) 771 – 489   B) 681 – 399   C) 669 – 391   D) 871 – 589   E) 600 – 318

16) A square contains 4 numbers. The sum of the numbers in the first row is 3 and the sum in row 2 is 8. The sum of the numbers in column 1 is 4. What is the sum in column 2?

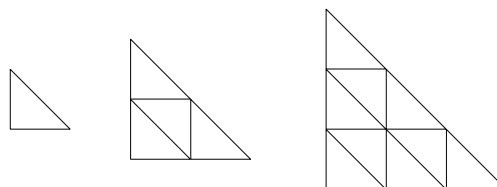A) 4   B) 6   C) 7   D) 8   E) 11

- **5-point questions-**

17) Heike has 4 different building parts shown below. By putting 2 of the four together she wants to make the figures A to D . Which figure cannot be made this way?

A)   B)   C)   D)   E) All are possible.

18) David uses small triangles to build bigger ones. For the first triangle he needs 1, for the second 4 and for the third he needs 9 small triangles. How many small triangles does he need for the 5th triangle?

A) 15   B) 20   C) 25   D) 30
E) 50

19) There are 5 houses in Paintstreet, number 1 to 5.

One of the houses is blue, one is red, one is yellow, one pink and one green.
We know:
- The numbers on the blue and yellow houses are even.
- The blue house is the only neighbor of the red house.
- The blue house is between the green and the red house.
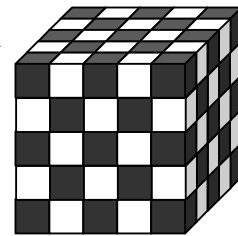
What is the color of house number 3?

A) blue   B) red   C) yellow   D) pink   E) green

20) If you add all digits of a 10-digit number you'll get the sum 9. What will you get, if you multiply these digits?

A) 0   B) 1   C) 45   D) $9 \cdot 8 \cdot 7 \cdot \ldots \cdot 2 \cdot 1$ E) depends on the number.

21) A cube with side 5 cm consists of small cubes of side 1 cm. A white cube is surrounded only by black ones and vice versa. How many white small cubes are there in the large cube?

A) 62   B) 63   C) 64   D) 65   E) 68

22) To make concrete you need to mix 4 shovels of gravel, 2 shovels of sand und one shovel cement. How many shovels of gravel are needed for 350 shovels of concrete?

A) 200   B) 150   C) 100   D) 87   E) 50

23) After 3 matches in a soccer tournament Platypus United scored 3 goals and gave up one goal. A victory counts 3 points, a tie counts 1 point and a loss counts 0 points. Which one is an impossible point-score for Platypus United after 3 games?

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

24) A natural number should be written into each of the whites squares in the chart to the right. You obtain that number by multiplying the number in the gray square left of the white square with the number in the gray square above the white square. Unfortunately some numbers in the gray fields are illegible.
Which two letters represent the same number?

.	?	?	?	7
?	J	K	L	56
?	M	36	8	N
?	O	27	6	P
6	18	R	S	42

A) L and M   B) O and N   C) R and P   D) K and P   E) M and S