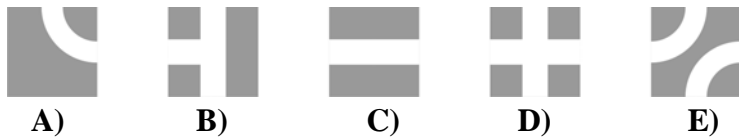# Känguru der Mathematik 2010
Group Écolier (Grades 3. and 4.)
# Austria - 18.3.2010

- 3 Point Questions -

1) In the picture on the right you see a map. In the middle a piece is missing. The cat should be able to reach the milk, and the mouse the cheese, but the cat and the mouse must not meet each other. What should the piece in the middle look like?

A)   **B)**   **C)**   **D)**   **E)**

2) A 40 minute long lesson began at 11:50 hours. Exactly in the middle of the lesson a bird flew into the classroom. At what time did this happen?

**A)** 11:30 hours   **B)** 12:00 hours   **C)** 12:10 hours   **D)** 12:20 hours   **E)** 12:30 hours

3) Which square contains 3 quadrilaterals, 3 circles and 4 hearts?

A)   **B)**   **C)**   **D)**   **E)**
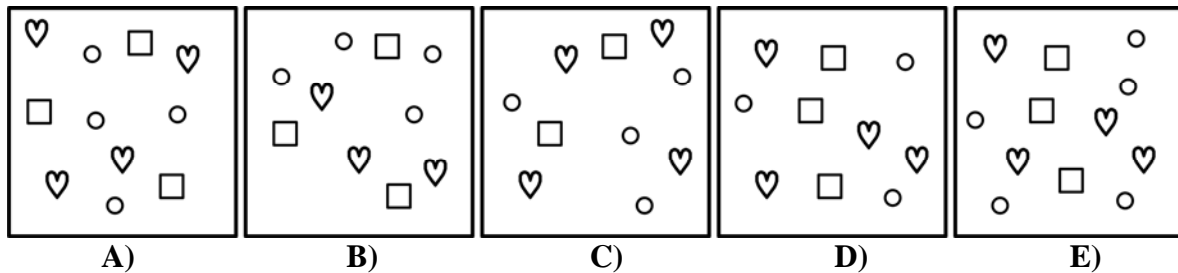
4) In a cafe the soup costs € 4, the main course € 9 and the dessert € 5. The three courses when ordered together cost € 15. How many Euro's cheaper is this, than ordering the same three courses separately?

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

5) Six coins build a triangle (see picture). What is the smallest number of coins that must be moved to create the circle?
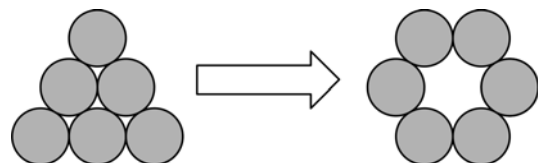
**A)** 1   **B)** 2   **C)** 3   **D)** 4   **E)** 5

6) Four friends each eat some icecream. Mike eats more than Franz, Jaroslav eats more than Veit and Jaroslav eats less than Franz. Put the friends in order according to how much icecream they have eaten. Begin with the largest amount.

A) Mike, Jaroslav, Veit, Franz   **B)** Veit, Mike, Franz, Jaroslav   **C)** Mike, Franz, Jaroslav, Veit

D) Jaroslav, Veit, Mike, Franz   **E)** Jaroslav, Mike, Veit, Franz

7) I have tiles that look like this...
Which pattern can I not create with them?

A)   **B)**   **C)**   **D)**   **E)**
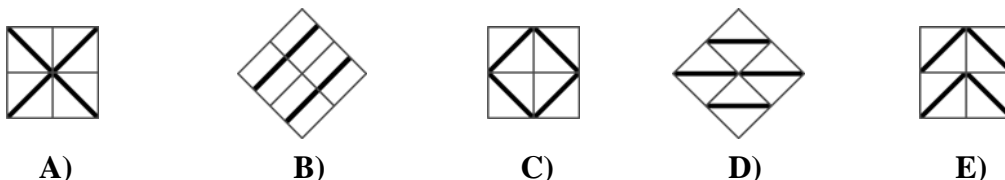
8) Eva is a centipede with exactly 100 feet. Yesterday she bought 16 pairs of shoes and wore them straight away. Even so she still had 14 feet with no shoes. On how many feet did she already wear shoes before going shopping yesterday?
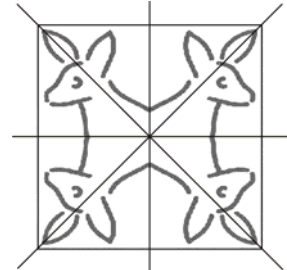
A) 27   **B)** 40   **C)** 54   **D)** 70   **E)** 77

- 4 Point Questions -

9) Given that $\blacktriangle + \blacktriangle + 6 = \blacktriangle + \blacktriangle + \blacktriangle + \blacktriangle$. Which number should replace $\blacktriangle$?

A) 2   **B)** 3   **C)** 4   **D)** 5   **E)** 6

10) Maria folds a square piece of paper in such a way that the kangaroos exactly overlap each other. Along how many of the lines shown is this possible?

A) 0   **B)** 1   **C)** 2   **D)** 3   **E)** 6

11) Matthias and Klara live in a tower block. Klara lives 12 floors above Matthias. One day Matthias climbs the staircase to visit Klara. When halfway he is on the 8th floor. On which floor does Klara live?
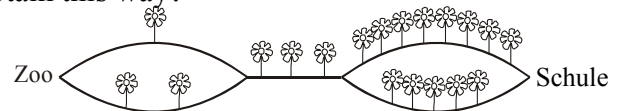
A) 12th   **B)** 14th   **C)** 16th   **D)** 20th   **E)** 24th

12) A large cube is made from 64 small cubes. The 5 visible faces of the large cube are green, the bottom face is red. How many of the small cubes have 3 green faces?
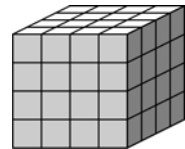
A) 4   **B)** 8   **C)** 16   **D)** 20   **E)** 24

13) Kangi walks directly from the zoo to school (Schule) and counts the flowers along the way. Which of the following numbers can he not obtain this way?

Zoo — Schule

A) 9   **B)** 10   **C)** 11   **D)** 12   **E)** 13

14) A ferry boat can transport, in one journey, either 10 cars or 6 lorries. Yesterday the boat crossed the river 5 times. It was always fully loaded and transported a total of 42 vehicles. How many of these were cars?

A) 10   **B)** 12   **C)** 20   **D)** 22   **E)** 30

15) Hans began a chain-email. He sent an e-mail to his friend Peter, who sent it on to 2 more people. Each person that receives the e-mail should send it to 2 more people. After 3 rounds 1+2+4 = 7 people have received the e-mail. How many people have received the e-mail after 5 rounds?

A) 15   **B)** 16   **C)** 31   **D)** 33   **E)** 63

16) On the playground some children measure the length of the playground with their strides. Anni makes 15 Strides, Betty 17, Denis 12 und Ivo 14. Who has the longest stride?

A) Anni   **B)** Betty   **C)** Denis   **D)** Ivo   **E)** Not possible to answer.

- 5 Point Questions -

17) Which number must replace the questionmark, if the total of the numbers in each row is the same?

1	2	3	4	5	6	7	8	9	10	199
11	12	13	14	15	16	17	18	19	20	?

A) 99   **B)** 100   **C)** 209   **D)** 289   **E)** 299

18) The number $60 \times 60 \times 24 \times 7$ is the same as

A) The number of minutes in seven weeks   **B)** The number of hours in sixty days

C) The number of seconds in seven hours   **D)** The number of seconds in one week

E) The number of minutes in 24 weeks

19) Two years ago the cats Tim and Tom were together 15 years old. Now Tom is 13 years old. In how many years will Tim be 9 years old?

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

20) Kamilla wrote down all of the numbers from 1- 100 one after the other in a table with 5 columns. A part of the table is shown. Her brother cut out a piece of the table and erased some of the numbers. Which of the following could this piece have been?

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

43		
	48	

A)

	58	
52		

B)

		69
72		

C)

81		
86		

D)

90		
	94	

E)

21) The teacher said „in our school library there are roughly 2010 books." The pupils then guessed exactly how many there are. Artur guesses 2010, Beate 1998 und Carlos 2015. They are wrong by 12, 7 and 5, but not in this order. How many books are in the library?

A) 2003   **B)** 2005   **C)** 2008   **D)** 2020   **E)** 2022

22) lines are drawn on a piece of paper and some of the lines are given numbers. The paper is cut along some of these lines and then folded as shown in the picture. What is the total of the numbers on the lines that were cut?
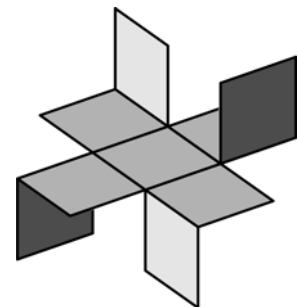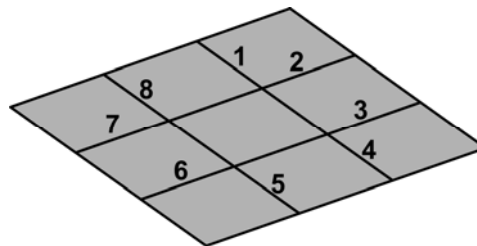
A) 16   **B)** 17   **C)** 18   **D)** 20   **E)** 21

23) Andrew, Stefan, Robert and Marko meet each other at a concert in Zagreb. They come from different cities: Paris, Dubrovnik, Rome and Berlin (not necessarily in this order)

- Andrew and the friend from Berlin arrive first in Zagreb. Neither of the two have been to Paris or Rome

- Robert is not from Berlin, but he arrives with the friend from Paris.

- Marko and the friend from Paris enjoyed the concert very much.

From which city does Marko come?

A) Paris   **B)** Rom   **C)** Dubrovnik   **D)** Berlin   **E)** Zagreb

24) Berti's friends add together the day and the month of their birthdays. They each get the answer 35, but no two have the same birthday. What is the maximum number of friends Berti has?

A) 7   **B)** 8   **C)** 9   **D)** 10   **E)** 12

KÄNGURU DER MATHEMATIK 2010
18.3.2010

Categorie: Écolier, Grades: 3-4

Name:	
School:	
Class:	

Time allowed: 60 min.
Each correct answer, questions 1.-8.:   3 Points
Each correct answer, questions 9.-16.:   4 Points
Each correct answer, questions 17.-24.:   5 Points
Each question with no answer given: 0 Points
Each incorrect answer: Lose ¼ of the points for than question.
You begin with 24 points.

**Please write the letter (A, B, C, D, E) of the correct answer
under the question number (1 to 24).
Write neatly and carefully!**

1	2	3	4	5	6	7	8

9	10	11	12	13	14	15	16

17	18	19	20	21	22	23	24

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