

# MATHEMATICS KANGAROO 2012

## Austria - 15.3.2012

Group: 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  $\frac{1}{4}$  of the points for that question.

You begin with 24 points.



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

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>

<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>

<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>

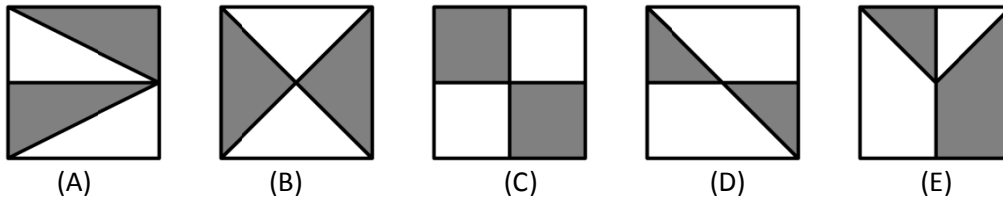
Information on the Kangaroo contest: [www.kaenguru.at](http://www.kaenguru.at)  
If you want to do more in this area, check out the Austrian Mathematical Olympiad. Info at: [www.oemo.at](http://www.oemo.at)

# Mathematics Kangaroo 2012 Group Écolier (Grades 3./4.) Austria - 15.3.2012



## - 3 Point Questions -

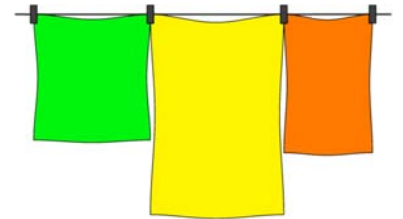
1. In which of the five pictures is the white area bigger than the grey area?



2. Barbara wrote the word MATHEMATIC on a piece of paper. She used the same colour for letters which are the same. She used a different colour for letters which are different. How many different colours did she use?

- (A) 7      (B) 8      (C) 9      (D) 10      (E) 13

3. Father hangs towels on the washing as shown in the picture. For three towels he uses 4 clothes pegs. How many clothes pegs would he use for 5 towels?



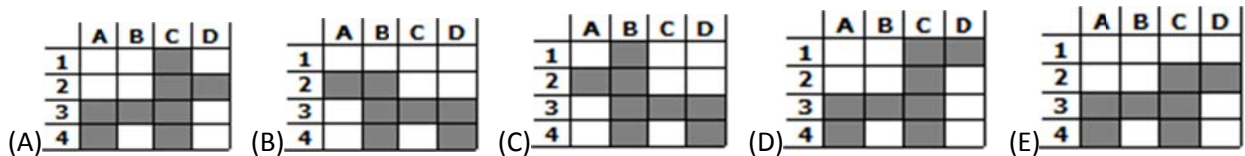
- (A) 4    (B) 5    (C) 6    (D) 8    (E) 10

4. Oli coloured in the following 8 fields in the grid:

A2, B1, B2, B3, B4, C3, D3 and D4.

Which is his grid?

	A	B	C	D
1				
2				
3				
4				

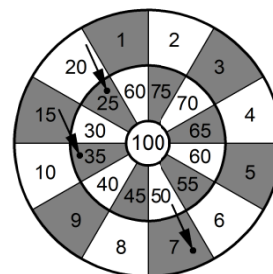


5. 13 children play hide and seek. One of them searches. After a little while 9 children are found. How many are still hiding?

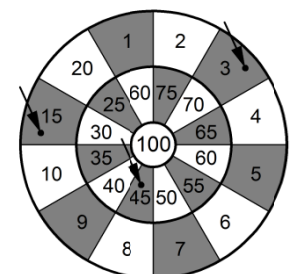
- (A) 3    (B) 4    (C) 5    (D) 9    (E) 22

6. Mike and Jake play darts. Each of them throws three darts. Who won, and by how many points?

- (A) Mike won. He had three points more.  
 (B) Jake won. He had 4 points more.  
 (C) Mike won. He had 2 points more.  
 (D) Jake won. He had 2 points more.  
 (E) Mike won. He had 4 points more.



Mike

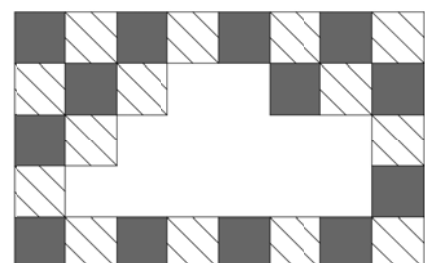


Jake

7. A Wall was tiled alternately with grey and striped tiles. Some tiles have fallen from the wall.

How many grey tiles have fallen off?

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

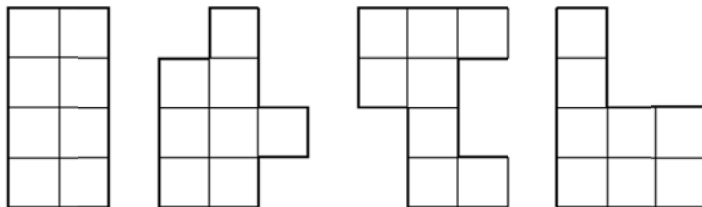


8. On the 24th February 2012 Grandfather's chicks hatched. There are 29 days in February in 2012. How old are the chicks today on 15th March 2012?

- (A) 29 days    (B) 24 days    (C) 22 days    (D) 20 days    (E) 15 days

**- 4 Point Questions -**

9. Anna has made two L shapes out of 8 squares. How many of the following 4 shapes can she make with both L shapes?



- (A) 0    (B) 1    (C) 2    (D) 3    (E) 4

10. 3 balloons cost 12 cents more than 1 balloon. How much does 1 balloon cost?

- (A) 4 Cents    (B) 6 Cents    (C) 8 Cents    (D) 10 Cents    (E) 12 Cents

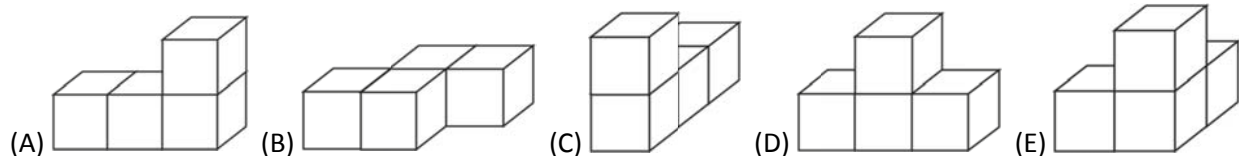
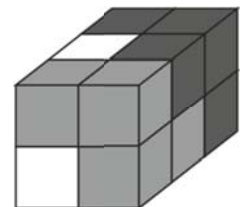
11. Grandmother baked 20 ginger biscuits for her grandchildren. She decorated them with raisins and nuts. First she decorated 15 with raisins, and then 15 with nuts. No biscuit was left over. How many biscuits were decorated with both raisins and nuts?

- (A) 4    (B) 5    (C) 6    (D) 8    (E) 10

12. In the school for animals there are 3 cats, 2 ducks, 2 sheep and some dogs. The teacher counted the legs of all the animals, and got 44. How many dogs go to the school?

- (A) 6    (B) 5    (C) 4    (D) 3    (E) 2

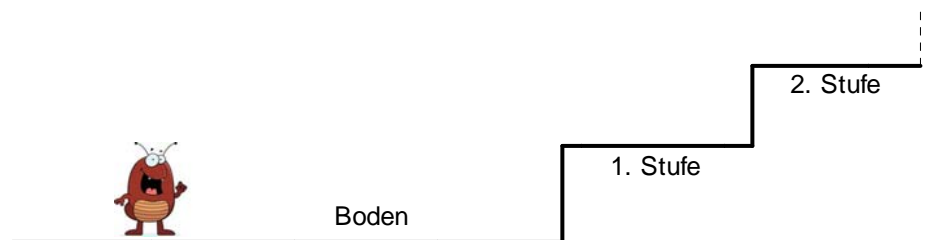
13. You need 3 pieces to build this shape. Each piece is made out of 4, equally sized cubes of the same colour. What is the shape of the white piece?



14. 15 tables were set for a party. 5 plates were laid on 6 tables. 3 plates were laid on the rest of the tables. How many plates were needed in total?

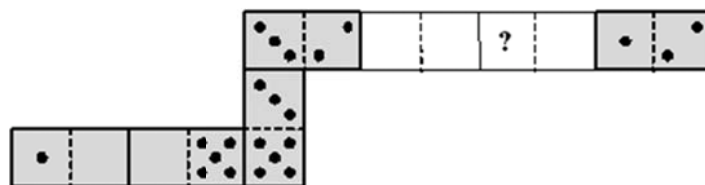
- (A) 45    (B) 50    (C) 57    (D) 60    (E) 75

15. A flea stands on the floor and wants to climb the 10 steps. He can either jump 3 steps upwards or jump 4 steps downwards. What is the smallest number of jumps he must make?



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

16. Frank laid out his dominoes as shown in the picture. (Dominoes which touch must always have the same number of points). Before his brother George removed two dominoes there were 33 points altogether. How many points is the questionmark worth?



- (A) 2      (B) 3      (C) 4      (D) 5      (E) 6

**- 5 Point Questions -**

17. In an arithmetic-sudoku, the values 1, 2, 3, 4 appear exactly once in each row and each column. Which value belongs in the grey square?

$1 \times 1$		$1 \times 3$	
$2 \times 2$	$6 - 3$		$6 - 5$
$4 - 1$	$1 + 3$	$8 - 7$	
$9 - 7$	$2 - 1$		

- (A) 1    (B) 2    (C) 3    (D) 4    (E) 1 or 2

18. The classmates of Thomas are twice as many girls as boys. How many children could be in the class?

- (A) 30      (B) 20      (C) 24      (D) 25      (E) 29

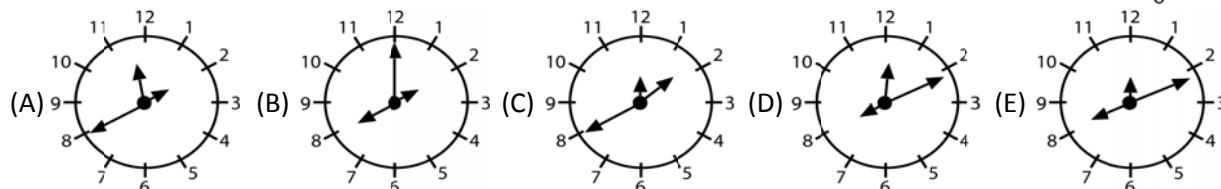
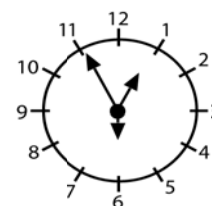
19. Gregory made two 3-digit numbers from the numbers 1, 2, 3, 4, 5, 6. Each number was used only once. Afterwards he added the numbers together. What is the largest answer that he could have got?

- (A) 975      (B) 999      (C) 1083      (D) 1173      (E) 1221

20. Anna, Laura, Lisa and Katharina wanted to take a photo together. Anna and Katharina are best Friends and wanted to stand next to each other. Lisa also wanted to stand next to Anna. In how many different ways can the photo be taken, if their wishes are to be met?

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

21. Grandma's watch has an hour, minute and second hand. We don't know which hand does which job, but we know that the watch tells the correct time. At 12:55:30 hours the watch looked as pictured. How will the watch look at 8:11:00 hours?



22. Michael thought of a number. He multiplied this number with itself, added 1, multiplied the result by 10, added 3 and multiplied the total by 4. He arrived at 2012. Which number had Michael thought of to start with?

- (A) 11      (B) 9      (C) 8      (D) 7      (E) 5

23. A rectangular piece of paper is 60 mm long and 36 mm wide. After making a straight cut you have a square and a leftover piece. You do the same with the leftover piece and so on until the leftover piece itself is square. What is the side length of the last square?

- (A) 1 mm      (B) 4 mm      (C) 6 mm      (D) 10 mm      (E) 12 mm

24. In football you get 3 points for a win, no points for a loss, and 1 point for a draw. A team has played 36 matches and has 80 points. What is the maximum number of matches the team could have lost?

- (A) 12      (B) 11      (C) 10      (D) 9      (E) 8