

MATHEMATICS KANGAROO 2011

Austria - 17.3.2011

Group: Écolier, Grades: 3-4

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| 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!

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|----------|----------|----------|----------|----------|----------|----------|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | | | | | |

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|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
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|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| | | | | | | | |

Information über den Känguruwettbewerb: www.kaenguru.at
Wenn Du mehr in dieser Richtung machen möchtest, gibt es die Österreichische Mathematikolympiade; Infos unter:
www.oemo.at

Mathematics Kangaroo 2011

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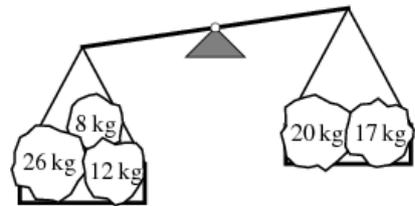
- 3 Point Questions -

1) Bernd wants to paint the word KANGAROO. He begins on a Wednesday and paints one letter each day. On which day will he paint the last letter?

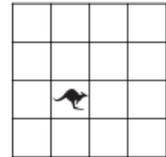
- A) Monday B) Tuesday C) Wednesday D) Thursday E) Friday

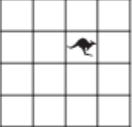
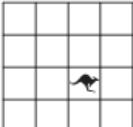
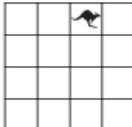
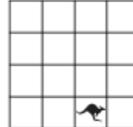
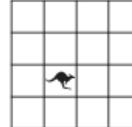
2) Which stone should Mr Flintstone place on the right side of the scales, so that both sides weigh the same?

- A)  B)  C)  D)  E) 



3) A game is played on a board as shown in the picture. I move the counter from square to square according to the following rules. First, one square to the right, then one square up, then one square left, then one square down, and then once again one square right. Which picture shows where the counter can then be found?

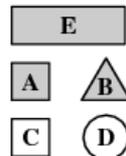


- A)  B)  C)  D)  E) 

4) Simon awoke one and a half hours ago. In three and a half hours he will catch a train to go to his grandma. How long before the time his train leaves, did he wake up?

- A) Two hours B) Three and a half hours C) Four hours
D) Four and a half hours E) Five hours

5) Maria describes one of these five shapes in the following way: „It is not a square. It is grey. It is either round or three sided.“ Which shape did she describe?



- A) A B) B C) C D) D E) E

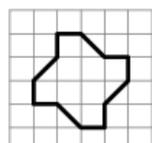
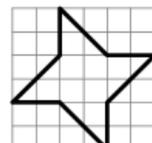
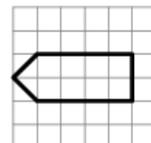
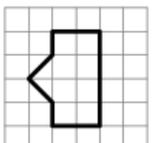
6) Lenka paid 1 Euro and 50 Cents for three scoops of ice cream. Miso paid 2 Euro's and 40 Cents for two chocolate bars. How much did Igor pay for one scoop of ice cream and one chocolate bar?

- A) 1 €70 c B) 1 €90 c C) 2 €20 c D) 2 €70 c E) 3 €90 c

7) The bell of a clocktower rings every full hour (8:00, 9:00, 10:00 etc.) and rings as many times as the number of hours. It also rings once on every half hour (8:30, 9:30, 10:30 etc). How often will it ring between 7:55 and 10:45?

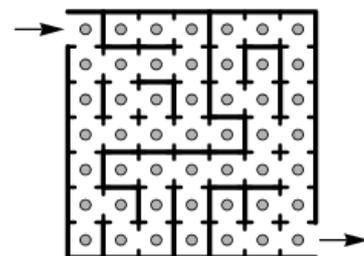
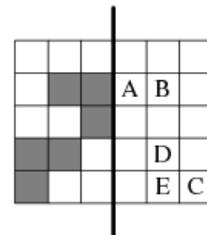
- A) 6 times B) 18 times C) 27 times D) 30 times E) 33 times

8) Which shape has the biggest area?

- A)  B)  C)  D)  E) 

- 4 Point Questions -

- 9) A chicken farmer packs eggs in boxes of 6 and boxes of 12. What is the smallest number of boxes he needs to pack 66 eggs?
A) 5 B) 6 C) 9 D) 11 E) 13
- 10) All the children in a class at school have at least one pet, and at most two pets. They write down how many pets they have together. Two children each have a dog and a fish. Three have each a cat and a dog. No child has two cats. Altogether they have eight cats, six dogs, and two fish. How many children are in the class?
A) 11 B) 12 C) 13 D) 14 E) 17
- 11) Johannes has only 5 Cent coins and 10 Cent coins in his pocket. Altogether he has 13 coins. Which of the following amounts cannot be the total of his coins?
A) 80 c B) 60 c C) 70 c D) 115 c E) 125 c
- 12) A page is folded along the thick line as shown. Which letter will not be covered by a grey square?
A) A B) B C) C D) D E) E
- 13) Anna, Bob, Cleo, Dido, Eva, and Ferdl each roll a dice. Each person rolls a different number. Anna's number is twice as big as Bob's. Anna's number is three times as big as Cleo's. Dido's number is four times as big as Eva's. Which number did Ferdl roll?
A) 2 B) 3 C) 4 D) 5 E) 6
- 14) A quizshow has the following rules: Each contestant begins with 10 points. They must answer 10 questions. For each correct answer they get a point and for each incorrect answer they lose a point. Mrs Blandorfer finished the show with 14 points. How many questions had she answered incorrectly?
A) 7 B) 4 C) 5 D) 3 E) 6
- 15) In each square of the maze there is a piece of cheese. Ronnie the mouse wants to enter and leave the maze as shown in the picture. He doesn't want to visit a square more than once, but would like to eat as much cheese as possible. What is the maximum number of pieces of cheese that he can eat?
A) 17 B) 33 C) 37 D) 41 E) 49
- 16) During a party, two identical cakes were each cut into four identical pieces. Each of these pieces was then cut into three identical pieces. Each person at the party got a piece of cake, and there were three pieces left over. How many people were at the party?
A) 24 B) 21 C) 18 D) 27 E) 13



- 5 Point Questions -

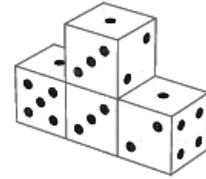
- 17) Four friends Masha, Sasha, Dasha and Pasha are sitting on a bench. At first Masha swapped places with Dasha. Then Dasha swapped places with Pasha. After this the four friends are sitting from left to right in the order: Masha, Sasha, Dasha, Pasha. In what order, from left to right were they sitting to begin with?
A) Masha, Sasha, Dasha, Pasha B) Masha, Dasha, Pasha, Sasha
C) Dasha, Sasha, Pasha, Masha D) Sasha, Masha, Dasha, Pasha
E) Pasha, Masha, Sasha, Dasha

18) How often in a day does a digital clock display four identical digits? The picture shows a digital clock that is displaying exactly two different digits.

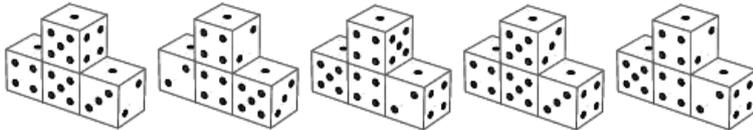


- A) 1 time B) 24 times C) 3 times D) 5 times E) 12 times

19) Four identical dice were put together to make a tower as shown. The sum of the numbers on opposite faces of each dice is always 7. What would the tower look like from behind?



- A) B) C) D) E)

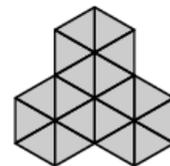


20) You can place together the cards pictured, to make different three digit numbers, for instance 989 or 986. How many different three digit numbers can you make with these cards?

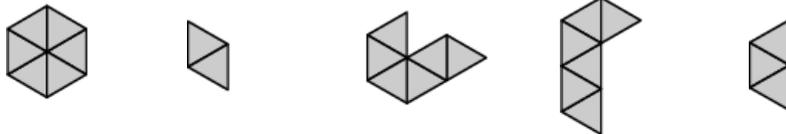


- A) 4 B) 6 C) 8 D) 9 E) 12

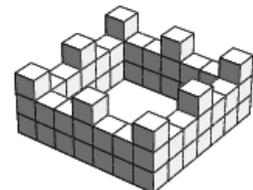
21) Andrea made the pattern in the picture out of several identical tiles. None of the tiles overlap each other. Which of the following tiles could she definitely not have used?



- A) B) C) D) E)

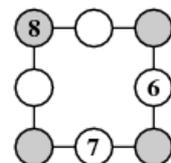


22) The picture shows a Fortress made from cubes. How many cubes were used to make it?



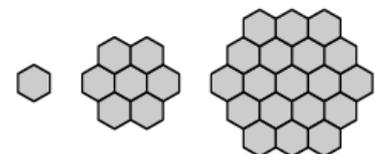
- A) 56 B) 60 C) 64 D) 68 E) 72

23) Johannes wrote the numbers 6, 7 and 8 in the circles as shown. He wants to write the numbers 1, 2, 3, 4 and 5 in the remaining circles so that the sum of the numbers along each side of the square is 13. What will be the sum of the numbers in the grey circles?



- A) 12 B) 13 C) 14 D) 15 E) 16

24) Sylvia draws patterns with hexagons as shown. If she carries on drawing in this way, how many hexagons will there be in the fifth pattern?



- A) 37 B) 49 C) 57 D) 61 E) 64