

The Mathematics Kangaroo 2004
Benjamins (grades 5 or 6)
18.3.2004



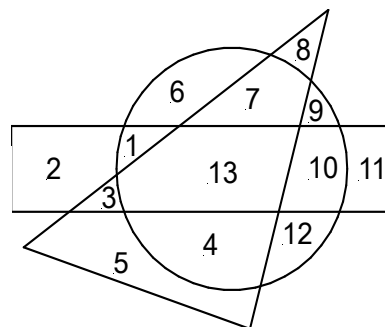
- 3 point questions -

1) How much is $1000 - 100 + 10 - 1$?

- A) 111 B) 900 C) 909 D) 990 E) 999

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

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



3) Igor has 16 cards from a regular deck of cards: 4 spades (♠), 4 clubs (♣), 4 diamonds (♦) and 4 hearts (♥). He wants to put them into the square such that there will be one of each suit in either row or columns. You can see that he has started already. What suit should replace the question mark?

- A) ♠ B) ♣ C) ♦ D) ♥ E) ambiguous.

♠		?	♥
♣	♠		
	♦		
	♥		

4) $(10 \times 100) \times (20 \times 80) =$

- A) 20000×80000 B) 2000×8000 C) 2000×80000 D) 20000×8000 E) 2000×800

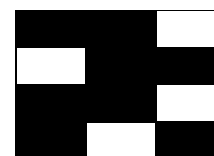
5) 360 000 seconds are equal to

- A) 3 hours B) 6 hours C) 8,5 hours D) 10 hours E) more than 10 hours

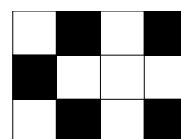
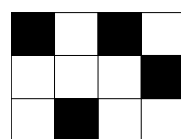
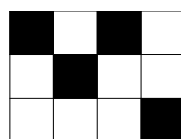
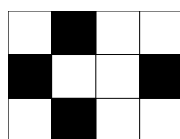
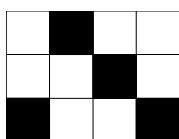
6) Edi collected 2004 pine cones and wants to sort them in groups of 5 cones. How many groups of 5 cones can he make at most?

- A) 5 B) 400 C) 401 D) 402 E) 404

7) Which of the rectangles A to E will become all black when covered with the figure on the right?



- A) B) C) D) E)



8) Which number is not a divisor of 2004?

- A) 8 B) 4 C) 3 D) 6 E) 12

- 4 point questions -

9) The three members of a rabbit family have all together eaten 73 carrot sticks. Father rabbit ate 5 more than Mama-rabbit. Son rabbit ate 12 carrot sticks. How many did Mama-rabbit eat?

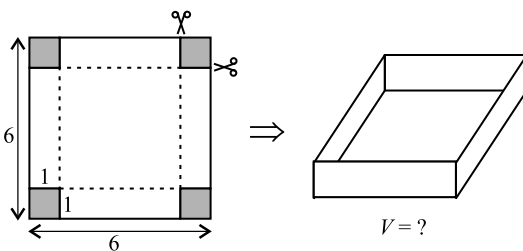
- A) 27 B) 28 C) 31 D) 33 E) 56

10) Which of the calculations yields the same result as $671-389$?

- A) $771-489$ B) $681-399$ C) $669-391$ D) $1871-1589$ E) $600-318$

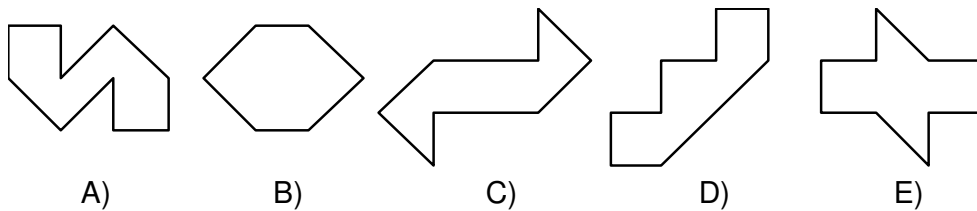
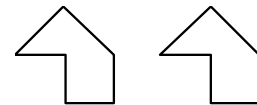
11) Along a bus route there are 9 bus stops at equal intervals. The first stop is 600 m away from the third. How far is it from the first to the last stop?

- A) 1200 m B) 1500 m C) 1800 m D) 2400 m E) 2700 m

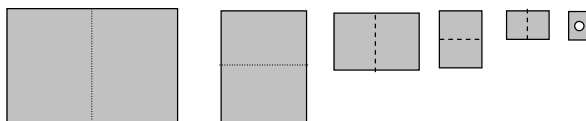
12)  How big is the volume of the box on the left?

- A) 25 cm^3 B) 36 cm^3 C) 30 cm^3 D) 16 cm^3 E) 24 cm^3

13) The two pieces of a puzzle may be rotated but not turned over. Which of the figures below cannot be made with them?



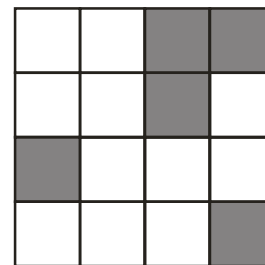
14) Harald folds a piece of paper 5 times and punches a hole through it as shown below? How many holes will be in the unfolded piece of paper?



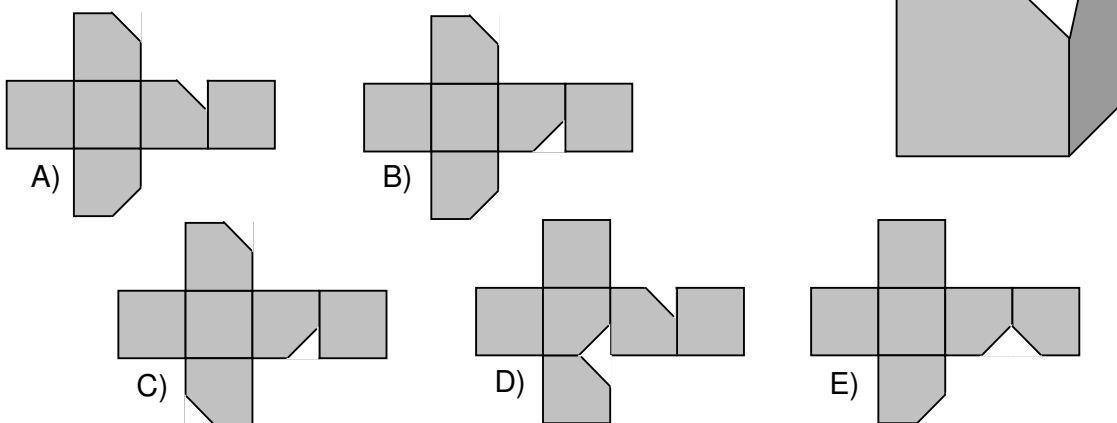
- A) 6 B) 10 C) 16 D) 20 E) 32

15) The smallest number of small squares that need to be shaded to yield a symmetric figure is...?

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



16) A corner of a cube has been cut off. Which net below is the net of the remaining figure?



- 5 point questions -

17) On Coco Island there is strange weather: it rains every Monday and Wednesday, every Saturday is foggy and sunny all other days. A tourist group wants to stay 44 days on the island with a maximum number of sunny days. Which day of the week should they start their holiday?

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

18) The sum of two natural numbers is 77. The first number times 8 is the same as the second number times 6. The larger of the 2 numbers is...?

- A) 23 B) 33 C) 43 D) 44 E) 54

19) Olli and Ulli picked mushrooms. In total they found 70 yellow or brown mushrooms. $\frac{5}{9}$ of Olli's mushrooms were brown and $\frac{2}{17}$ of Ulli's were yellow. How many mushrooms did Olli find?

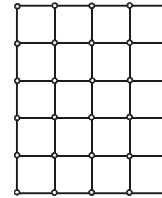
- A) 27 B) 36 C) 45 D) 54 E) 10

20) The row below has 11 spaces. The first space contains the number 7, the ninth the number 6. We know that the sum of any consecutive three numbers is 21. What number must be in space two?



- A) 7 B) 8 C) 6 D) 10 E) 21

21) The pattern to the right is made of pearls and string. How many connections have to be cut to make a continuous and closed chain of pearls?



- A) 19 B) 21 C) 21 D) 22 E) can't be made.

22) Willi divides $\underbrace{111\dots1}_{2004}$ by 3. How many zeros does the result contain?

- A) 670 B) 669 C) 668 D) 667 E) 665

23) I have 108 red spheres and 180 green ones. I want to put them into bags such that each bag contains the same number of red and the same number of green spheres. What is the maximum number of bags I can use?

- A) 36 B) 18 C) 8 D) 1 E) 288

24) Cutting a rectangle with sides 6 cm and 8 cm along its diagonal you obtain two right triangles. One such triangle is folded along one side. The area of one of the resulting figures is...?

- A) 9 cm^2 B) 12 cm^2 C) 18 cm^2 D) 24 cm^2 E) 30 cm^2