Kangaroo 2006 — Benjamin





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3-Point-Problems

A) 6

1. $3 \times 2006 = 2005 + 2007 + ? ext{.}$ Find the missing number.

A) 2005 B) 2006 C) 2007 D) 2008

2. Six numbers are written on the cards, as shown. What is the largest number you can form with the given cards by placing them in a row?

A) 9 876 543 210 B) 4 130 975 682

C) 7 568 413 092 D) 7 685 413 092

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41

309

- 3. Four people can sit at a square table. For the school party the students put together 10 square tables in order to make one long table. How many people could sit at this long table?
 A) 20
 B) 22
 C) 30
 D) 32
- 4. Choose the picture where the angle between the hands of a watch is 150°.



5. On the left side of Main Street one will find all odd house-numbers from 1 to 39. On the right side the house-numbers are all the even numbers from 2 to 34. How many houses are there on the Main Street?

C) 8

D) 9

A) 35 B) 36 C) 37 D) 38

6. With how many ways one can get a number 2006 while following the arrows on the figure?

B) 7



8. The cube in the figure has one of the following nets:





4-Point-Problems

9. We need 9 kg of ink to paint the whole cube. How much ink do you need to paint the surface of figure near the cube (see figure)?





- A) 4 B) 5
- 10. What is the difference between the sum of the first 100 strictly positive even numbers and the sum of the first 100 positive odd numbers? A) 20 D) 200

C) 6

- B) 50 C) 100
- **11.** A paper in the shape of a regular hexagon, as the one shown, is folded in such a way that the three marked corners touch each other at the centre of the hexagon. What is the obtained figure?
 - B) hexagon A) six corner star C) square
- 12. The diameter AB of the circle is 10 cm (as shown in figure). What
- is the perimeter of the figure which is marked with dark line, if the rectangles in the figure are coincident? B) 20 cm D) 30 cm A) 16 cm C) 25 cm



Α



13. Which path is the shortest?



- 14. Ali is building squares with matches adding small squares that it already has built according to the schema of the figure. How many matches does he have to add to the 5^{th} square to build the 6^{th} square?
 - A) 12



C) 20



D) 24



B) 18

- A. perimeter of K is more than perimeter of A by 1
- B. perimeter of N is more than perimeter of A by 1
- C. perimeters of A and N are equal
- D. perimeters of K and N are equal

16. Find a truly end of the sentence: If I look on your reflection then

- A. your reflection looks on me
- B. my reflection looks on you
- C. my reflection looks on your reflection
- D. your reflection looks on mine reflection

5-Point-Problems

- 17. A rod of length 15 dm was divided into the greatest possible number of pieces of different integer lengths in dm. The number of cuts is:
 - A) 2 B) 3 C) 4 D) 5



18. A river goes through a city and there are two islands. There are also six bridges as shown in the figure. How many paths there are going out of a shore of the river (point A) and come back (to point B) after having spent one and only one time for each bridge?A) 0B) 2C) 4



19. In which of triples the central number is strictly in the middle between two others.

A) $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	B) 12, 21, 32	C) 3, 7, 13	D) $\frac{1}{3}, \frac{1}{2}, \frac{2}{3}$
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20. What is the smallest number of dots that need to be removed from the pattern shown, so that no three of the remaining dots are at the vertices of an equilateral triangle?



A) 2 B) 3 C) 4 D) 5