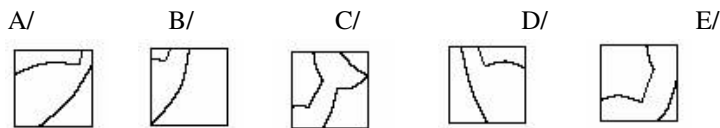
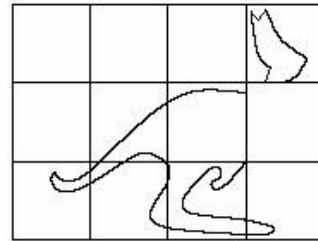


Math Kangaroo 2002

Level of grades 3 - 4

Problems 3 points each:

1. Which of the squares below should be put into the picture to the right, to get the symbol of our competition?



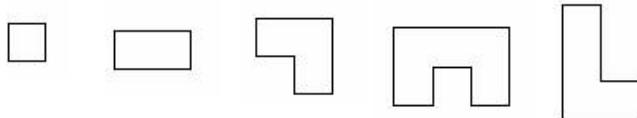
2. After we simplify $2 + 2 - 2 + 2 - 2 + 2 - 2 + 2 - 2 + 2$
the result will be:

A/ 0 B/ 2 C/ 4 D/ 12 E/ 20

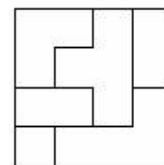
3. Andrzej received three cars, four balls, three teddy bears, ten pens, two chocolate bars, and a book for his birthday. How many items did he get in all?

A/ 15 B/ 17 C/ 20 D/ 23 E/ 27

4. A square was divided into pieces (see the picture). Which of the following pieces does not occur in



this divided square?



A/ B/ C/ D/ E/

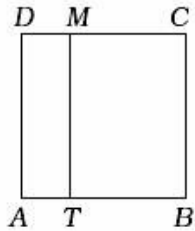
5. Julia, Kasia, Zuzanna, and Helena have their birthdays on March 1st, May 17th, July 20th, and March 20th. Kasia and Zuzanna were born in the same month. Julia and Zuzanna were born on the same day of a month. Which of the girls was born on May 17th?

A/ Julia B/ Kasia C/ Zuzanna E/ Helena
E/ It cannot be determined from the given information.

6. A human heart beats an average of 70 times per minute. On average how many times does it beat during one hour?

- A/ 42,000 B/ 7,000 C/ 4,200 D/ 700 E/ 420

7. Quadrilateral $ABCD$ is a square and its side is 10 cm long. Quadrilateral $ATMD$ is a rectangle and its shorter side is 3 cm. What is the difference between the sum of the lengths of all the sides of the square and the sum of the lengths of all the sides of the rectangle?

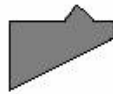
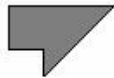
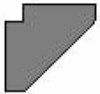


- A/ 14 cm B/ 10 cm C/ 7 cm D/ 6 cm E/ 4 cm

8.



Which of the figures below (see the picture) couldn't be made with folding a rectangular sheet just once?

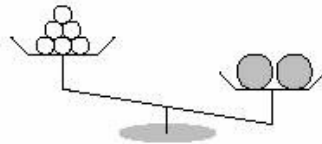


- A) B) C) D) E)

Problems 4 points each:

9. Houses on the street where John lives are numbered from 1 to 24. How many times does the digit 2 appear in the numbering of those houses?

- A/ 2 B/ 4 C/ 8 D/ 16 E/ 32



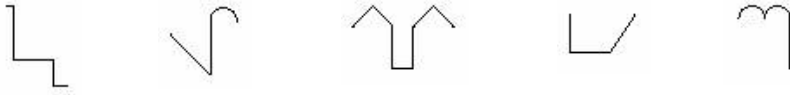
10.

There are six identical oranges on one scale of the balance and two identical melons on the other scale. After we put one melon on the scale with the oranges, the scales will be balanced. How many oranges weigh as much as one melon?

- A/ 2 B/ 3 C/ 4 D/ 5 E/ 6

11. This picture below is a sketch of a castle. Which of the lines below does not belong to the sketch?





- A) B) C) D) E)

12. We add 17 to the smallest two-digit number and then we divide the sum by the largest one-digit number. What is the result?

- A/ 3 B/ 6 C/ 9 D/ 11 E/ 27



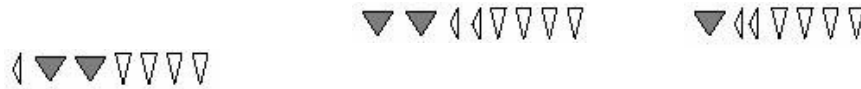
13. In a certain ancient country the numbers: one, ten, and sixty were expressed with the following symbols:

- one ten sixty

Using those symbols people were writing down other numbers, for example the number 22 was written as



Which of the following notations represents the number 124 ?



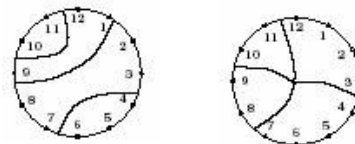
- A) B) C)

- D) E)

14. A face of a clock was divided into four parts. The sums of the numbers in each of those parts are consecutive numbers. Which of the following pictures satisfies this rule?



numbers. Which of the following pictures satisfies this rule?

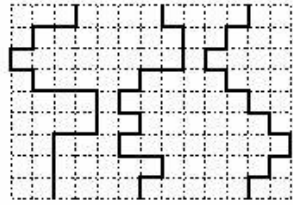


- A) B) C) D) E)

15. Klara and Zosia had 60 matches altogether. Klara took as many matches as she needed to build a triangle, each side 6 matches long. Zosia used the remaining matches to build a rectangle, which had one side equal to 6 matches. How many matches long is each of the longer sides of this rectangle?

- A/ 9 B/ 12 C/ 15 D/ 18 E/ 30

16. Three kangaroos: Miki, Niki, and Oki participated in a competition. Jumping at the same speed, they jumped along the lines you can see in the picture. Only one of the following sentences A, B, C, D and E is true. Which one?



Miki Niki Oki

- A/ Miki and Oki finished at the same time.
- B/ Niki finished first.
- C/ Oki finished last.
- D/ All kangaroos finished at the same time.
- E/ Miki and Niki finished at the same time.

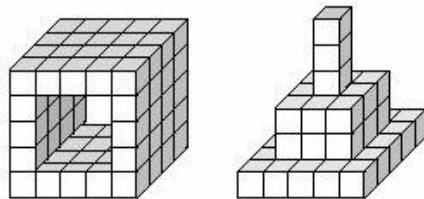
Problems 5 points each:

17. Each boy: Mietek, Mirek, Pawel, and Zbyszek has exactly one of the following animals: a cat, a dog, a gold fish, and a canary-bird. Mirek has a pet with fur. Zbyszek has a pet with four legs. Pawel has a bird, and Mietek and Mirek don't like cats. Which of the following sentences is not true?

- A/ Zbyszek has a dog.
- B/ Pawel has a canary.
- C/ Mietek has a golden fish.
- D/ Zbyszek has a cat.
- E/ Mirek has a dog.

18. Marysia leaves her house at 6:55 and arrives at school at 7:32. Zosia needs 12 minutes less than Marysia to get to school. Yesterday Zosia showed up at school at 7:45. What time did she leave her house?

- A/ At 7:07
- B/ At 7:20
- C/ At 7:25
- D/ At 7:30
- E/ At 7:33



19.

Robert had a certain number of identical cubes. He glued a tunnel using half of his blocks (see Picture 1). With some of the remaining cubes he formed a pyramid (see Picture 2). How many blocks were not used to build those structures?

- A/ 34
- B/ 28
- C/ 22
- D/ 18
- E/ 15

2

20. Daughter is 3 years old, and her mother is 28 years older than the daughter. How many years later will the mother be three times older than her daughter?

- A/ 9
- B/ 12
- C/ 10
- D/ 1
- E/ 11

21. A conductor wanted to make a trio consisting of a fiddler, a pianist, and a drummer. He had to choose one of two fiddlers, one of two pianists, and one of two drummers. He decided to try each of the possible trios. How many attempts did he have to make?

- A/ 3
- B/ 4
- C/ 8
- D/ 24
- E/ 25

22. One medal can be cut out from a golden square plate. If four medals are made from four plates, the remaining parts of those four plates can be used to make one more plate. What is the largest number of medals that could be formed when 16 plates are used?

- A/ 17
- B/ 19
- C/ 20
- D/ 21
- E/ 32

23. Twenty eight students from the fourth grade competed in the math competition. Each student earned a different number of points. The number of students who received more points than Tomek is two times smaller than the number of students who had less points than Tomek. In which position did Tomek finish that competition?

A/ 6th

B/ 7th

C/ 8th

D/ 9th

E/ 10th

24. An odometer in a car shows the number 187569 of passed kilometers. This number consists of all different digits. After passing how many kilometers will the odometer show a number consisting of all different digits again?

A/ After 777 km

B/ After 12,431 km

C/ After 431 km

D/ After 21 km

E/ After 11 km

