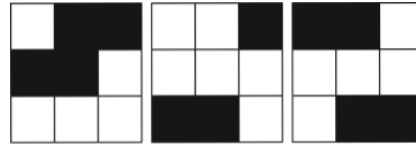**18.** We have three transparent sheets with the following patterns. We can only rotate the three sheets without turning over. Then we put them exactly on top of each other. What is the maximum possible number of black squares seen in the obtained square if looked at from above?

A) 5 **B)** 6 **C)** 7 **D)** 8 **E)** 9

19. The numbers 2, 3, 5, 6 and 7 are written in the squares of the cross (see fig.) so that the sum of the numbers in the row is equal to the sum of the numbers in the column. Which of the numbers can be written in the center square of the cross?
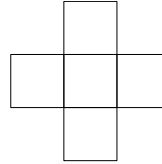
A) Only 3 **B)** Only 5 **C)** Only 7 **D)** 5 or 7 **E)** 3, 5 or 7

20. Peter has ten balls, numbered from 0 to 9. He distributed these balls among three friends: John got three balls, George four and Ann three. Then he asked each of his friends to multiply the numbers on the balls they got and the results were: 0 for John, 72 for George and 90 for Ann. What is the sum of the numbers on the balls that John received?
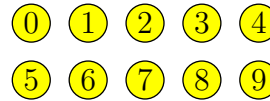
A) 11 **B)** 12 **C)** 13 **D)** 14 **E)** 15

21. Three ropes are laid down on the floor as shown. You can make one big, complete loop with three other pieces of rope. Which of the ropes shown will give you one big loop?
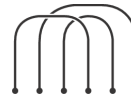
A) **B)** **C)** **D)** **E)**

22. During 3 days Joy the cat was catching mice. Each next day Joy caught 2 mice more than in the previous day. On the third day Joy has caught twice as many mice as on the first day. In total, how many mice did Joy catch during the three days?

A) 12 **B)** 15 **C)** 18 **D)** 20 **E)** 24

23. The Kangaroo jumps from circle S along the line to the next circle in one jump. It is not allowed to jump into any circle more than once. In how many different ways, by taking only 4 jumps, can the Kangaroo reach circle F?
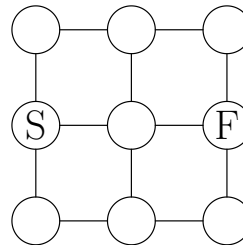
A) 3 **B)** 4 **C)** 5 **D)** 6 **E)** 7

24. Anna, Berta, Charlie, David and Elisa were baking cookies during the weekend, on Saturday and Sunday. Over the whole weekend Anna made 24 cookies, Berta 25, Charlie 26, David 27 and Elisa 28. After the whole weekend one of them had twice as many cookies as after Saturday, one 3 times, one 4 times, one 5 times and one 6 times as many. Who baked the most cookies on Saturday?

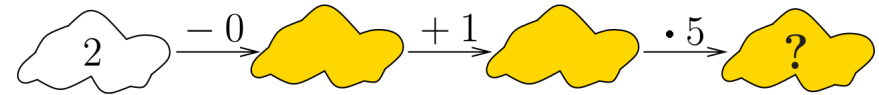**A)** Anna **B)** Berta **C)** Charlie **D)** David **E)** Elisa

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M
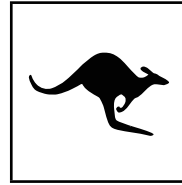
Time allowed: 75 minutes
Calculators are not permitted

Minor
3–4 grades

Questions for 3 points

1.

$$2 \quad -0 \quad +1 \quad \cdot 5 \quad ?$$

A) 6 **B)** 7 **C)** 8 **D)** 10 **E)** 15

2. Eric had 10 equal metal strips. He has screwed pairs of them together into five long strips. Which strip is the longest?
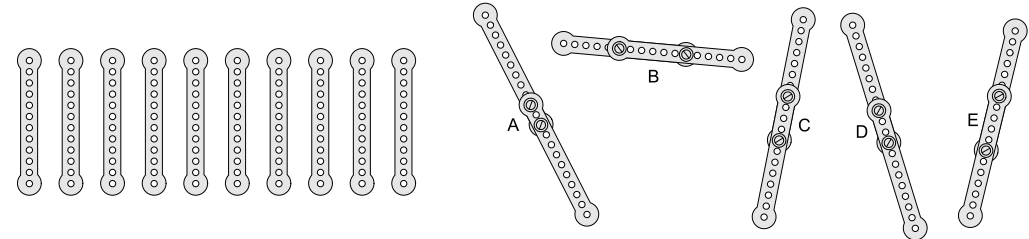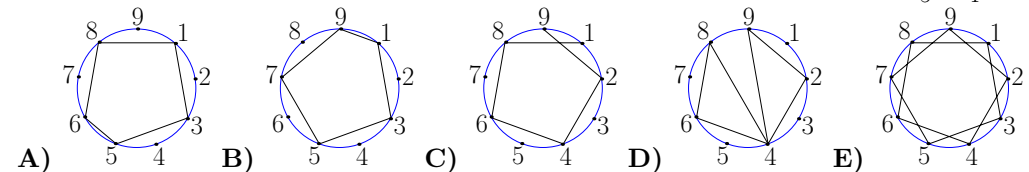
A) A **B)** B **C)** C **D)** D **E)** E

3. Which number is hidden behind the square?

A) 2 **B)** 3 **C)** 4 **D)** 5 **E)** 6

$$\triangle + 4 = 7$$

$$\blacksquare + \triangle = 9$$

4. We start drawing a line at every second dot on the circle until we are back at the number 1. The first two lines are drawn already. What figure do we get?

A) **B)** **C)** **D)** **E)**

5. Which result is the biggest?
A) $(1000-100):10$ **B)** $(1000-10):9$ **C)** $(1000-1):9$
D) $(1000-100):9$ **E)** $(1000-10):10$

6. A whole number has two digits. The product of the digits of this number is 15. The sum of the digits of this number is:
A) 2   **B)** 4   **C)** 6   **D)** 7   **E)** 8

7. In the figure, we see an island with a highly indented coastline and several frogs. How many of these frogs are sitting on the island?
A) 5   **B)** 6   **C)** 7   **D)** 8   **E)** 9
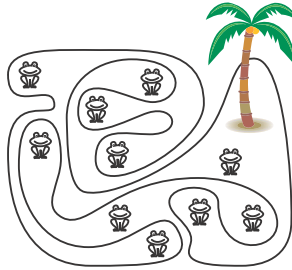
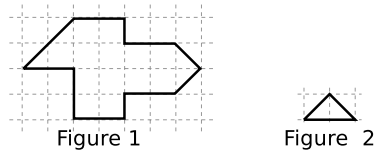**8.** My umbrella has KANGAROO written on top. It is shown in the picture on the right. Which of the following pictures also shows my umbrella?

A)   **B)**   **C)**   **D)**   **E)**
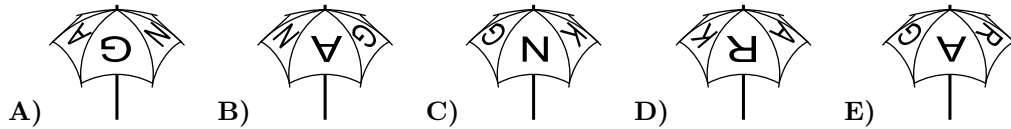
Questions for 4 points

9. Basil wants to cut the shape depicted in Figure 1 into identical triangles as in Figure 2. How many triangles will he get?
A) 8   **B)** 12   **C)** 14   **D)** 15   **E)** 16

Figure 1   Figure 2

10. Luis has 7 apples and 2 bananas. He gives 2 apples to Yuri who, in return, gives bananas to Luis. Then Luis has as many apples as bananas. How many bananas did Yuri give to Luis?
**A)** 2   **B)** 3   **C)** 4   **D)** 5   **E)** 7

11. Jack built a cube using 27 small cubes which are colored either black or white (see figure). No two of the small cubes which are colored in the same color have a common face. How many white cubes did Jack use?
A) 10   **B)** 12   **C)** 13   **D)** 14   **E)** 15
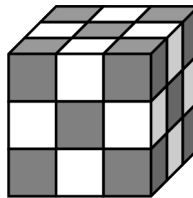
12. In a speed skating competition 10 racers reached the final. Tom overtook 3 racers more than overtook him. Which place did Tom end up in?
A) 1   **B)** 3   **C)** 4   **D)** 6   **E)** 7

13. Josip has 4 toys – a car, a doll, a ball and a ship. He wants to put them on a line on a shelf. The ship has to be next to the car and the doll has to be next to the car. In how many ways can he arrange them so all the conditions would be fulfilled?
**A)** 2   **B)** 4   **C)** 5   **D)** 6   **E)** 8

14. Pete rides a bicycle in the park as in the figure. He starts from the point S in the direction of the arrow. At the first crossroad he turns right, then at the next crossroad he turns left, then right again, then left again and so on in that order. What is the sign at which he won't pass?
A) A   **B)** B   **C)** C   **D)** D   **E)** E
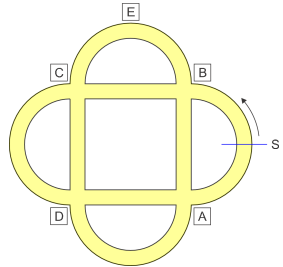
15. There are 5 ladybirds (see fig.). Two ladybirds are friends with each other if the numbers of spots that they have differ exactly by 1. On Kangaroo Day each of the ladybirds sent to each of her friends one SMS greeting. How many SMS greetings were sent?
A) 2   **B)** 4   **C)** 6   **D)** 8   **E)** 9

16. The figure is divided into three identical pieces. What did the pieces look like?

A)   **B)**   **C)**   **D)**   **E)**
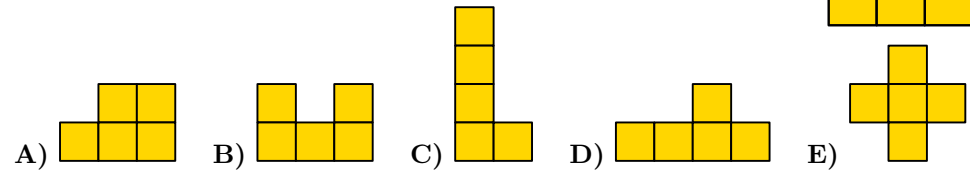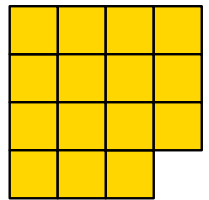
Questions for 5 points

17. Don made two bricks sticking two cubes together. Which construction cannont be built of these two bricks?

A)   **B)**   **C)**   **D)**   **E)**