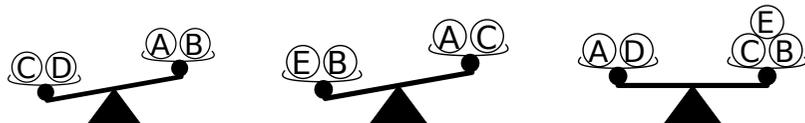


22. We have five balls A, B, C, D and E. One of the balls weighs 30 g, one weighs 80 g and each of the remaining three balls weighs 50 g. Which ball weighs 30 g?



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

23. If  $A$ ,  $B$  and  $C$  are distinct digits, then the largest possible 6-digit number written using 3 digits  $A$ , 2 digits  $B$ , and 1 digit  $C$  cannot be equal to

- A)  $AAABBC$  B)  $CAAABB$  C)  $BBA AAC$  D)  $AAABCB$  E)  $AAACBB$

24. The sum of the ages of Kate and her mother is 36, and the sum of the ages of her mother and her granny is 81. How old was her granny when Kate was born?

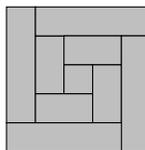
- A) 28 B) 38 C) 45 D) 53 E) 56

25. Nick wants to arrange the numbers 2, 3, 4, 5, 6, 7, 8, 9 and 10 into several groups such that the sum of the numbers in each group is the same. What is the largest number of groups he can get?

- A) 2 B) 3 C) 4 D) 6 E) Other answer

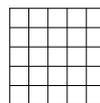
26. Peter saw an 8 cm wide wooden shelf into 9 parts. One piece was a square, the rest were rectangles. Then he put all the pieces together as shown in the picture. How long was the shelf?

- A) 150 cm B) 168 cm C) 196 cm D) 200 cm E) 232 cm



27. Write 0 or 1 in each cell of the  $5 \times 5$  table such that each  $2 \times 2$  square of the table contains exactly 3 equal numbers. What is the largest possible sum of all the numbers in the table?

- A) 22 B) 21 C) 20 D) 19 E) 18

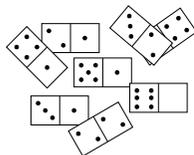


28. 14 people are seated at a round table. Each person is either a liar or tells the truth. Everybody says: "Both my neighbours are liars". What is the maximum number of liars at the table?

- A) 7 B) 8 C) 9 D) 10 E) 14

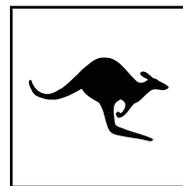
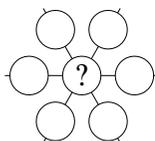
29. There are eight domino tiles on the table (see the picture). One half of one tile is covered. The 8 tiles can be arranged into a  $4 \times 4$  square, so that the number of dots in each row and column is the same. How many dots are on the covered part?

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

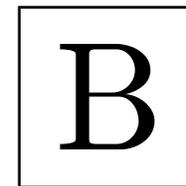


30. Write the numbers 3, 4, 5, 6, 7, 8 and 9 in the seven circles to obtain equal sums along each of the three lines. What is the sum of all possible numbers replacing the question mark?

- A) 3 B) 6 C) 9 D) 12 E) 18



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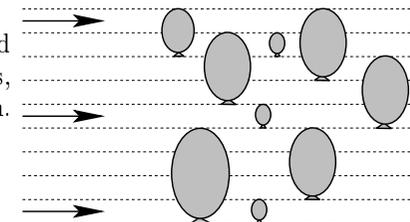
Time allowed: 75 minutes  
Calculators are not permitted

Benjamin  
5–6 grades

Questions for 3 points

1. The drawing shows 3 flying arrows and 9 fixed balloons. When an arrow hits a balloon, it bursts, and the arrow flies in the same direction. How many balloons will not be hit by arrows?

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

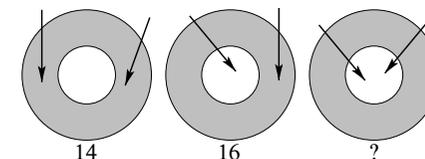


2. What is the largest result of the following actions?

- A)  $2+0+1+8$  B)  $2 \cdot 0 \cdot 1 \cdot 8$  C)  $(2+0) \cdot (1+8)$  D)  $20 \cdot 18$  E)  $2 \cdot 0 + 1 \cdot 8$

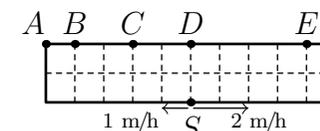
3. Diana first got 14 points with two arrows on the target. The second time she got 16 points. How many points did she get the third time?

- A) 17 B) 18 C) 19 D) 20 E) 22



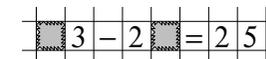
4. A garden is divided into identical squares. Two snails move along the perimeter of the garden starting from the point  $S$  but in different directions. The first snail moves at the speed of 1 meter per hour (1 m/h) and the second one at 2 meters per hour (2 m/h). At what point will the two snails meet?

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



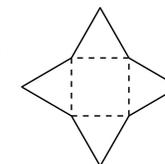
5. Alice subtracted two 2-digit numbers. Then she painted two cells. What is the sum of the two digits in the painted cells?

- A) 8 B) 9 C) 12 D) 13 E) 15



6. A star is made of four equilateral triangles and a square. The perimeter of the square is 36 cm. What is the perimeter of the star?

- A) 144 cm B) 120 cm C) 104 cm D) 90 cm E) 72 cm

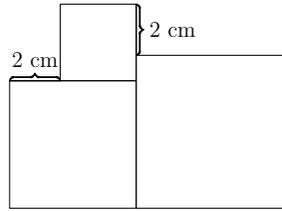


7. The second day of a month falls on Thursday. What day of the week is the 25th of that month?

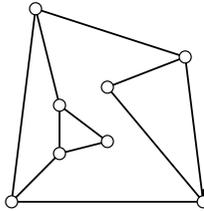
- A) Monday B) Wednesday C) Thursday D) Saturday E) Sunday

8. How many times do we have to roll a regular die to be sure that at least one result will be repeated?  
 A) 5 B) 6 C) 7 D) 12 E) 18

9. There are 3 squares in the figure. The side length of the smallest square is 3 cm. What is the side length of the biggest square?  
 A) 4 cm B) 5 cm C) 6 cm D) 7 cm E) 8 cm

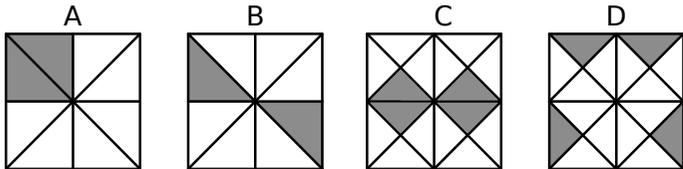


10. In the following figure, the circles are light bulbs connected to some other light bulbs. Initially, all light bulbs are off. When you touch a light bulb, this light bulb and all its neighbours are lit. At least how many light bulbs do you have to touch to lite all the light bulbs?  
 A) 1 B) 2 C) 3 D) 4 E) 5



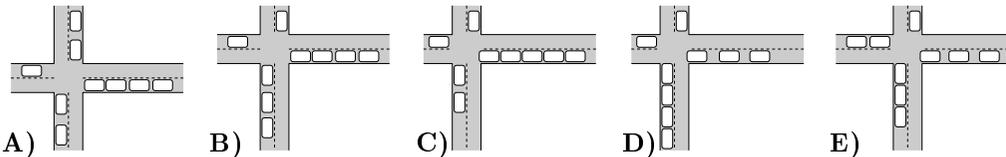
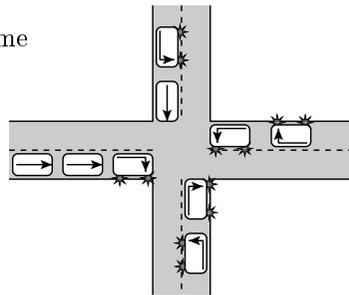
**Questions for 4 points**

11. In which of the four squares A, B, C, D is the ratio of the black area the largest?



A) A B) B C) C D) D E) They are all the same

12. Nine cars arrive at a crossroads and drive off as indicated by the arrows. Which figure shows these cars after leaving the crossroads?



13. Each of the shapes covers one of the numbers 1, 2, 3, 4 or 5 so that both of the calculations are correct and the same shapes cover the same numbers. What number is covered by the triangle?  
 A) 1 B) 2 C) 3 D) 4 E) 5

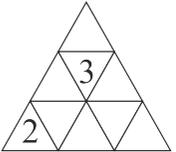
$$\square + \triangle - \bigcirc = 8$$

$$\square \times \hexagon : \bigcirc = 8$$

14. A lion is hidden in one of three rooms. A note on the door of room 1 reads "The lion is not here". A note on the door of room 2 reads "The lion is here". A note on the door of room 3 reads " $2 + 3 = 5$ ". Only one of these sentences is true. In which room is the lion hidden?  
 A) Door 1 B) Door 2 C) Door 3 D) All three doors are possible  
 E) Both door 1 and door 2 are possible

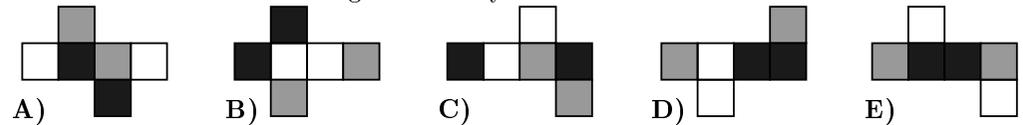
15. Two kangaroos, Kanga and Roo and three rabbits, Peter, Flopsy and Mopsy play with a ball. When a kangaroo has the ball, it throws it to the other kangaroo or to a rabbit. When a rabbit has the ball, it throws it to another rabbit but never to the rabbit from whom he just received it. Kanga starts by throwing the ball to Peter. Who will do the fifth throw?  
 A) Kanga B) Roo C) Peter D) Flopsy E) Mopsy

16. Emily wants to enter a number into each cell of the triangular table. The sum of the numbers in any two cells with a common edge must be the same. She has already entered two numbers. What is the sum of all the numbers in the table?  
 A) 18 B) 20 C) 21 D) 22 E) 24



17. On Monday Alexandra shares a picture with 5 friends. For several days everybody who receives the picture, sends it the next day to two friends who haven't seen the picture yet. On which day does the number of people who have seen the picture becomes greater than 100?  
 A) Tuesday B) Wednesday C) Thursday D) Friday E) Saturday

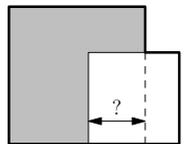
18. The faces of a cube are painted black, white or grey so that opposite faces are of different colour. Which of the following is definitely not a net of this cube?



19. John does a calculation using the digits  $A, B, C$  and  $D$ . Which digit is represented by  $B$ ?  
 A) 0 B) 2 C) 4 D) 5 E) 6

$$\begin{array}{r} A B C \\ + C B A \\ \hline D D D D \end{array}$$

20. Two paper squares are placed one onto another as showed in the picture. The side length of the gray square is 12 cm and the side length of the white square is 8 cm. The obtained figure is outlined. The perimeter of this figure equals 54 cm. What is the length of the distance marked with a question mark?  
 A) 3 cm B) 3.5 cm C) 4 cm D) 4.5 cm E) 5 cm



**Questions for 5 points**

21. From the list 3, 5, 2, 6, 1, 4, 7 Masha chose 3 different numbers whose sum is 8. From the same list Dasha chose 3 different numbers whose sum is 7. How many common numbers have been chosen by both girls?  
 A) None B) 1 C) 2 D) 3 E) Impossible to determine