A 10 **B** 12 **C** 6 **D** 9 **E** 15

BENJAMIN (grades 5 and 6)

3-POINT QUESTIONS

B1. Which number is the smallest one?

A $2+0+0+8$ **B** $200:8$ **C** $2\cdot 0\cdot 0\cdot 8$ **D** $200-8$ **E** $8+0+0-2$

B2. By what can be replaced to get: $\cdot$ $= 2\cdot 2\cdot 3\cdot 3$?

A 2 **B** 3 **C** $2\cdot 3$ **D** $2\cdot 2$ **E** $3\cdot 3$

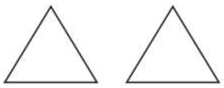
B3. John (J) likes to multiply by 3, Pete (P) likes to add 2, and Nick (N) likes to subtract 1. In what order should they perform their favourite actions to convert 3 into 14?

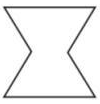
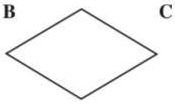
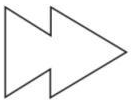
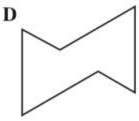
A JPN **B** PJN **C** JNP **D** NJP **E** PNJ

B4. To make the equality $1+1\clubsuit 1-2=100$ correct, we should replace $\clubsuit$ by

A $+$ **B** $-$ **C** $:$ **D** 0 **E** 1

B5. Carol is playing with two equilateral triangular cards shown. She puts one card beside or on the top of a part of the other and both on a sheet of paper. Then she draws on the paper around them, following the contour. She cannot get only one of the shapes. Which one is it?



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

B6. Numbers 2, 3, 4 and one more unknown number are written in the cells of 2×2 table. It is known that the sum of the numbers in the first row is equal to 9, and the sum of the numbers in the second row is equal to 6. The unknown number is

A 5 **B** 6 **C** 7 **D** 8 **E** 4

B7. At a pirate school, each student had to sew a black and white flag. The condition was, that the black colour had to cover exactly three fifths of the flag. How many of the following flags fulfilled this condition?

A None **B** One **C** Two **D** Three **E** Four

B8. Before the snowball fight, Paul had prepared a few snowballs. During the fight, he has made another 17 snowballs and he threw 21 snowball at the other boys. After the fight, he had 15 snowballs left. How many snowballs had Paul prepared before the fight?

A 53 **B** 11 **C** 23 **D** 19 **E** 18

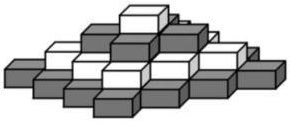
B9. This is a small piece of the multiplication table and another one, in which, unfortunately, some numbers are missing. What is the number in the square with the question mark?

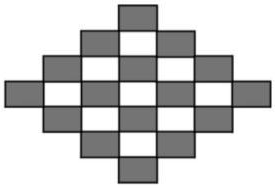
A 54 **B** 56 **C** 65 **D** 36 **E** 42

×	4	3
5	20	15
7	28	21

×		
	35	63
	30	?

B10. In a shop selling toys a four-storey black and white "brickflower" is displayed (see picture on the left). Each storey is made of bricks of the same colour. In the picture on the right, the flower is shown from the top. How many white bricks were used to make the flower?





A 9 **B** 10 **C** 12 **D** 13 **E** 14

4-POINT QUESTIONS

B11. With what number of identical matches it is impossible to form a triangle?

A 7 **B** 6 **C** 5 **D** 4 **E** 3

B12. There are 5 boxes and each box contains some cards labeled K, M, H, P, T, as shown below. Peter wants to remove cards out of each box so that at the end each box contained only one card, and different boxes contained cards with different letters. Which card remains in the first box?

LIVEWORKSHEETS

A None **B** One **C** Two **D** Three **E** Four

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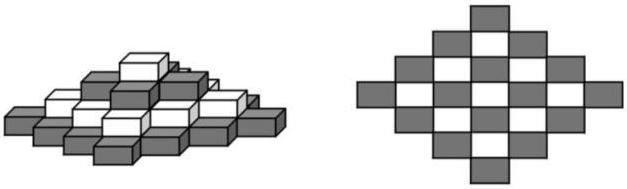

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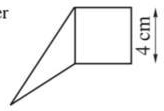
A It is impossible to do this **B** T **C** M **D** H **E** P

B13. The triangle and the square have the same perimeter. What is the perimeter of the whole figure (a pentagon)?

A 12 cm **B** 24 cm **C** 28 cm **D** 32 cm
E It depends on the lengths of triangle sides



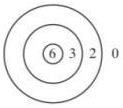
B14. A circular table is surrounded by 60 chairs. What is the least number of people that could be seated at the table so that each of them had a neighbour?

A 31 **B** 30 **C** 20 **D** 10 **E** None of the previous ones

B15. A river starts at point A. As it flows the river splits into two. One branch takes $\frac{1}{3}$ of the water and the second takes the rest. Later the second branch splits into two, one taking $\frac{3}{4}$ of the branch's water, the other the rest. The map below shows the situation. What part of the original water flows at the point B?

A $\frac{1}{4}$ **B** $\frac{2}{9}$ **C** $\frac{1}{2}$ **D** $\frac{1}{6}$ **E** Cannot be determined

B16. By shooting two arrows at the shown target on the wall, how many different scores can we obtain?

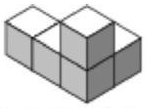


A 4 **B** 6 **C** 8 **D** 9 **E** 10

B17. Rebeka wanted to put all her CDs on a shelf, but one third of them did not fit there. Those CDs that did not fit on the shelf were put into three cases. She put seven CDs into each, but there were still two more CDs, which did not fit into those cases, so she left them on the desk. How many CDs does Rebeka have?

A 23 **B** 81 **C** 69 **D** 67 **E** 93

B18. Which of the "buildings" **A**–**E**, each consisting of 5 cubes, cannot be obtained from the building on the right, if you are allowed to move only one cube?



A **B** [redacted]

LIVEWORKSHEETS

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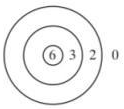

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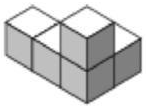
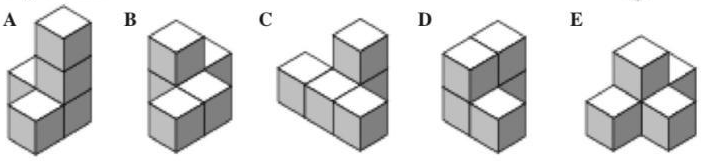




B19. Points A, B, C and D are marked on the straight line in some order. It is known that $AB = 13$, $BC = 11$, $CD = 14$ and $DA = 12$. What is the distance between the farthest two points?

A 14 **B** 38 **C** 50 **D** 25 **E** Another answer

B20. Two years later my son will be twice as old as he was two years ago. And three years later my daughter will be three times as old as she was three years ago. What is right?

A The son is one year older **B** The daughter is one year older
C They are of equal age **D** The son is two years older
E The daughter is two years older

5-POINT QUESTIONS

B21. The five signs @, $*$, #, &, $\triangledown$ represent five different digits. Which digit does $\triangledown$ represent, if

$@ + @ + @ = *, \quad \# + \# + \# = \&, \quad * + \& = \triangledown$?

A 0 **B** 2 **C** 6 **D** 8 **E** 9

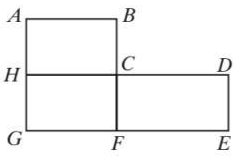
B22. 3 friends live on the same street: a doctor, engineer, and a musician. Their names are: Smith, Roberts, and Farrel. The doctor has neither sister, nor brother. He is the youngest among his friends. Farrel is older than the engineer and is married to the sister of Smith. The names of the doctor, engineer, and musician are as follows:

A Smith, Roberts, Farrel **B** Farrel, Smith, Roberts **C** Roberts, Smith, Farrel
D Roberts, Farrel, Smith **E** Smith, Farrel, Roberts

B23. Suppose you make a trip over the squared board shown, and you visit every square exactly once. Where must you start, if you can move only horizontally or vertically, but not diagonally?

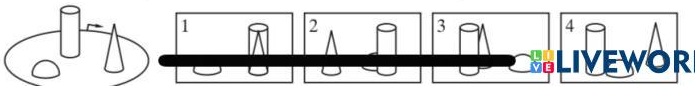
A Only in the middle square **B** Only at a corner square
C Only at an unshaded square **D** Only at a shaded square **E** At any square

B24. The picture shows the plan of a town. There are four circular bus routes in the town. Bus 1 follows the route $CDEFGHC$, which is 17 km long. Bus 2 goes $ABCFGHA$, and covers 12 km. The route of bus 3 is $ABCDEFGHA$, and is equal to 20 km. Bus 4 follows the route $CFGHC$. How long is this route?



A 5 km **B** 8 km **C** 9 km **D** 12 km **E** 15 km

B25. Betty walked around the park once, starting from the marked point in the direction of the arrow. She took 4 pictures. In which order did she take the pictures?



LIVEWORKSHEETS

B21. The five signs @, ∗, #, &, ▽ represent five different digits. Which digit does ▽ represent, if

@ + @ + @ = ∗, # + # + # = &, ∗ + & = ▽?

A 0 **B** 2 **C** 6 **D** 8 **E** 9

B22. 3 friends live on the same street: a doctor, engineer, and a musician. Their names are: Smith, Roberts, and Farrel. The doctor has neither sister, nor brother. He is the youngest among his friends. Farrel is older than the engineer and is married to the sister of Smith. The names of the doctor, engineer, and musician are as follows:

A Smith, Roberts, Farrel **B** Farrel, Smith, Roberts **C** Roberts, Smith, Farrel
D Roberts, Farrel, Smith **E** Smith, Farrel, Roberts

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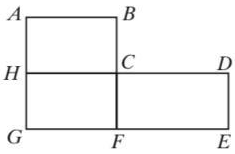

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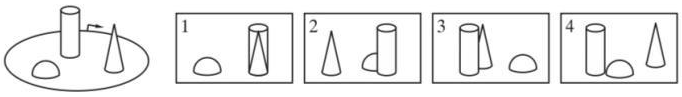
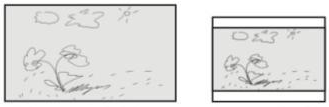


A 2 4 3 1 **B** 4 2 1 3 **C** 2 1 4 3 **D** 2 1 3 4 **E** 3 2 1 4

B26. Seven cards are in a box. The numbers from 1 to 7 are written on these cards. The first sage takes at random 3 cards out of the box and the second sage takes 2 cards (2 cards are left in the box). Then looking at his cards, the first sage says to the second one: "I know that the sum of the numbers of your cards is even". What is the sum of card numbers of the first sage?

A 10 **B** 12 **C** 6 **D** 9 **E** 15

B27. The new TV screens have the sides 16:9 and the old ones have the sides 4:3.



We have a DVD that occupies exactly all the screen 16:9. We want to watch this film on the old 4:3 screen. If the width of the film occupies exactly the width of the old screen, then the empty part of the screen is:

A $\frac{1}{2}$ **B** $\frac{1}{5}$ **C** $\frac{1}{4}$ **D** $\frac{1}{3}$ **E** It depends on the size of the screen

B28. For each 2-digit number, the digit of units was subtracted from the digit of tens. What is the sum of all the results?

A 90 **B** 100 **C** 55 **D** 45 **E** 30

B29. In the picture any letter stands for some digit (different letters for different digits, equal letters for equal digits). Find the value of the difference RN – KG.

$$\begin{array}{r} \text{K A N} \\ + \quad \text{G A} \\ \hline \text{R O O} \end{array}$$

A 10 **B** 11 **C** 12 **D** 21 **E** 22

B30. How many digits can be erased at most from the 1000-digit number 2008 2008. . . 2008 so that the sum of the remaining digits were 2008?

A 564 **B** 497 **C** 500 **D** 601 **E** 746

CADET (grades 7 and 8)

LIVEWORKSHEETS

3 POINT QUESTIONS