- The time allotted is 50 minutes.
- The allowed tools are writing and drawing instruments, i.e. pencil, paper, eraser, ruler and compass. Calculators and mathematical tables are not allowed.
- Each problem has exactly one correct answer. Wrong answer is not punished.
- The problems are not ordered in increasing difficulty, but the first problems are likely to be easier than the last ones.

1. Compute $1.0 \text{ L} - 2 \text{ dL}$.

    a) 8 dL   **b)** 18 dL   **c)** 2 L   **d)** 1.2 L   **e)** 8 L

2. The lifespans of the following three Finnish writers were: Minna Canth: 1844-1897, Aleksis Kivi: 1834-1872, Sakari Topelius: 1818-1898. Arrange the writers from the one whose lifespan was the shortest to the one whose lifespan was the longest.

    a) Canth, Kivi, Topelius   **b)** Kivi, Canth, Topelius   **c)** Topelius, Kivi, Canth
    d) Topelius, Canth, Kivi   **e)** Kivi, Topelius, Canth

3. If there are one hundred people watching a movie in a cinema, the movie lasts 2 h 10 min. How long the movie lasts when there are 50 people watching it in the cinema?

    a) 1 h 5 min   **b)** 1 h 10 min   **c)** 2 h 5 min   **d)** 2 h 10 min   **e)** 4 h 20 min

4. The object in the figure consists of dark cubes whose side length is 2. What is the volume of the object?

    a) 26   **b)** 30   **c)** 52   **d)** 104   **e)** 120
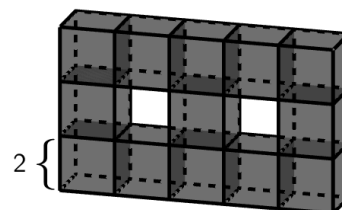
5. Leo has coins in his pocket. Some of the coins are 5 c and the rest of them are 20 c. Which one of the following can **not** be the total value of all of the coins in his pocket?

    a) 25 c   **b)** 40 c   **c)** 90 c   **d)** 105 c   **e)** 112 c

6. Let us toss a coin. What is the least number of coin-tosses required, to guarantee that one of the sides (heads or tails) shows at least twice?

    a) 1   **b)** 2   **c)** 3   **d)** 4   **e)** 5

7. Compute $10\% - 1.3 + 4 \cdot \frac{5}{6}$.

    a) $-\frac{26}{3}$ **b)** $\frac{3}{10}$ **c)** $\frac{32}{15}$ **d)** $\frac{91}{30}$ **e)** Cannot be computed.

8. Which one of the following polygons appears most often in the figure? Consider only polygons whose sides are drawn in the figure and who do not have any lines drawn inside it.

a) Triangles   **b)** Quadrilaterals   **c)** Pentagons
d) There are equally many of all the aforementioned polygons.
e) None of the above.
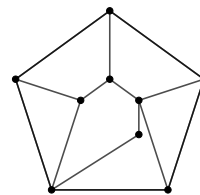
9. Aino goes for a run. First, she runs 500 m to north. Then, she turns 90° right and runs 1300 m. After that, she turns 90° right again and runs 700 m. Then, she turns 90° left and runs 100 m. Next, she turns 180° left and runs 1400 m.
How far is Aino from the starting point?

a) 0 m   **b)** 200 m   **c)** 400 m   **d)** 1800 m   **e)** 5000 m

10. There are ten different flavours of ice cream in an ice cream kiosk. How may different ice cream cones, with two scoops of different flavour, can you by?
Two cones are different when they have different flavour on the top or at the bottom. In particular, two cones are different also in the case when they have same flavours but in a different order.

**a)** 45   **b)** 50   **c)** 55   **d)** 90   **e)** 100

11. Ten children did long jumps. Each of them jumped once. The average value of the jumps was 2.85 m. After a moment, they noticed that some jumps were measured to be 5 cm too short. The results were corrected and a new average value of the jumps was 2.87 m.
How many jumps were measured to be too short in the beginning?

a) 0   **b)** 1   **c)** 2   **d)** 3   **e)** 4

12. The width of the rectangle is 5 and its area is 15. The lower width of the white trapezium on the left is 1. What is the area of the dark triangle?

a) 4.5   **b)** 5   **c)** 6   **d)** 7.5   **e)** 9
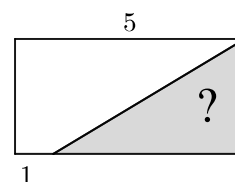
13. The first two terms in the sequence $3, 4, 2, 8, 6, \ldots$ are 3 and 4. After these, the next term is always the last digit of the product of the two previous terms. For example, the third term is 2 since we have $3 \cdot 4 = 12$. What is the 2023rd term in the sequence?

a) 2   **b)** 3   **c)** 4   **d)** 6   **e)** 8

14. There are 10 red, 20 yellow and 10 blue balls in a box. Anna takes ten of them and then Elmeri takes ten of the remaining balls. Anna and Elmeri take a look at their piles of balls. They notice that **only one** of the following statements is true. Which one?

a) Anna and Elmeri have equally many yellow balls.
b) Anna has more blue balls than Elmeri.
c) There are no yellow balls left in the box.
d) Anna and Elmeri combines have more than half of the balls.
e) Anna has less red and yellow balls combined than Elmeri.

15. Let $J = 1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6} + \frac{1}{7} + \frac{1}{8} + \frac{1}{9}$. How large is the number J?

a) $0 \leq J < 2$ **b)** $2 \leq J < 4$ **c)** $4 \leq J < 6$ **d)** $6 \leq J < 8$ **e)** $8 \leq J < 10$