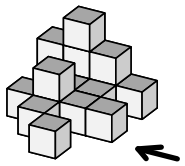
Year 7 and 8 (ENGLISH VERSION)

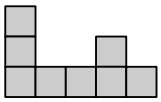
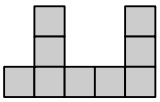
Thursday, 19th March 2026 Time allowed: 75 minutes

1. For each question exactly one of the 5 options is correct.
2. Each participant is given 30 points at the beginning. For each correct answer 3, 4 or 5 points are added. No answer means 0 points are added. If a wrong answer is given, one quarter of the points is subtracted, i. e. 0.75 points, 1 point or 1.25 points, respectively. At the end, the maximum number of points is 150, the minimum is 0.
3. Calculators and other electronic devices are not allowed.

3 point problems

A1 Leyla looks at this pile of boxes from the right, as shown by the arrow. What does she see?

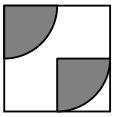
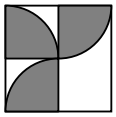


(**A**)  (**B**)  (**C**)  (**D**)  (**E**) 

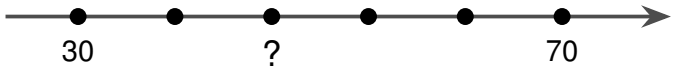
A2 Frederik swaps two adjacent digits in the number 743852. This gives him a larger number. Which digits did he swap?

(**A**) 7 and 4 (**B**) 4 and 3 (**C**) 3 and 8 (**D**) 8 and 5 (**E**) 5 and 2

A3 In which diagram does the shaded part have the largest area?

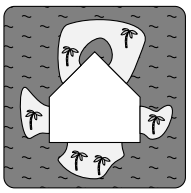
(**A**)  (**B**)  (**C**)  (**D**)  (**E**) 

A4 The number line shows six equally spaced points. What number is represented by the question mark?



(**A**) 45 (**B**) 46 (**C**) 47 (**D**) 48 (**E**) 49

A5 The puzzle on the right can be completed with any of the pieces below. Which piece creates the most islands?



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

A6 Alea has two standard six-sided dice, one light grey and one dark grey. She rolls both dice and then subtracts the number on the dark grey dice from the number on the light grey dice. How many different results are possible?

(**A**) 4 (**B**) 7 (**C**) 8 (**D**) 11 (**E**) 13

A7 A “tiger number” is a natural number in which all digits are odd and different from each other. For example, 795 is a tiger number. What digit does the next largest tiger number after 795 end with?

(**A**) 1 (**B**) 3 (**C**) 5 (**D**) 7 (**E**) 9

A8 Which of the following numbers is not the sum of two or three consecutive numbers?

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

A9 Noel looks in the mirror and sees the reflection of the digital clock on the cupboard behind him. He realises the reflection also shows an actual time. What time could the clock show?

(**A**) 

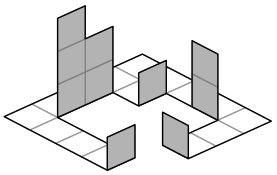
(**B**) 

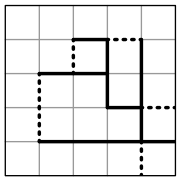
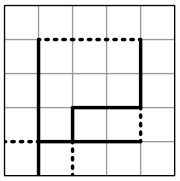
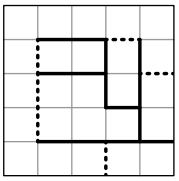
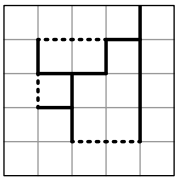
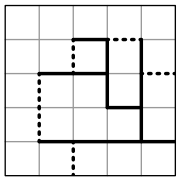
(**C**) 

(**D**) 

(**E**) 

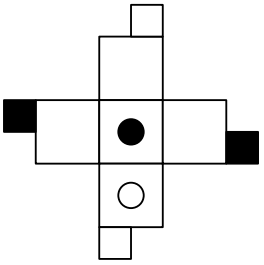
A10 Hedda uses a paper template to make the figure shown. She cuts the template along the solid thick lines and then folds it along the dashed lines.
Which template does Hedda use?

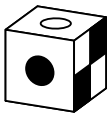
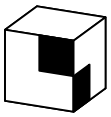
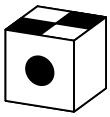
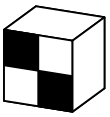
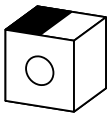


(**A**) 
(**B**) 
(**C**) 
(**D**) 
(**E**) 

4 point problems

B1 The net on the right folds to make one of the cubes below. Which one?

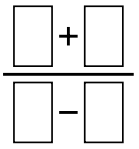


(**A**) 
(**B**) 
(**C**) 
(**D**) 
(**E**) 

B2 City A and city B are connected by 3 roads. City B and city C are connected by 5 roads. Mohammed travels from city A to city C through city B. On the way back, he wants to travel through city B again. His return journey should use at least one different road. How many possible routes are there for his return journey?

(**A**) 10 (**B**) 11 (**C**) 12 (**D**) 13 (**E**) 14

B3 Levi writes the numbers 2, 0, 2 and 6 in the boxes above and below the fraction line.
What is the smallest positive value the fraction can have?



(**A**) $\frac{1}{6}$ (**B**) $\frac{1}{5}$ (**C**) $\frac{1}{4}$ (**D**) $\frac{1}{3}$ (**E**) $\frac{1}{2}$

B4 Alma, Bilal, Colin and Diana go to the cinema together. The four friends are given four seats next to each other. They have the following requests:

(1) Alma would like to sit on the seat to the right of Bilal.
(2) Bilal does not want to sit on the leftmost seat.
(3) Diana wants to sit between two of her friends.

In what order, from left to right, should the four friends sit?

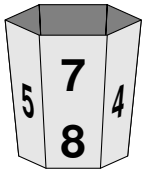
(**A**) Colin, Bilal, Alma, Diana (**B**) Colin, Diana, Bilal, Alma (**C**) Bilal, Alma, Diana, Colin
(**D**) Colin, Diana, Alma, Bilal (**E**) Diana, Colin, Alma, Bilal

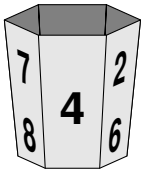
B5 In the addition problem shown on the right, the same letters represent the same digits and different letters represent different digits. What is the sum of $R + S + T$?

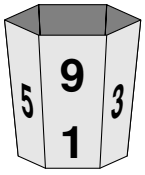
$$\begin{array}{r} R\ S\ T \\ +\ R\ T\ S \\ \hline T\ 4\ R \end{array}$$

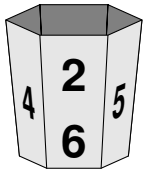
(**A**) 12 (**B**) 15 (**C**) 16 (**D**) 19 (**E**) 20

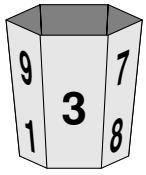
B6 Uli's mug has the digits 1 to 9 printed on it. Four of the pictures below show his mug. Which picture does not show Uli's mug?

(**A**) 

(**B**) 

(**C**) 

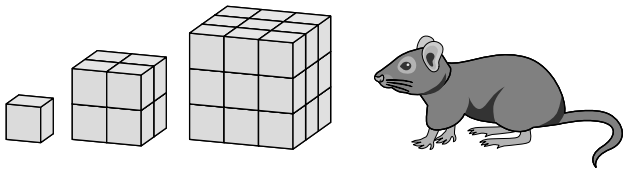
(**D**) 

(**E**) 

B7 Much to Teodora's amusement, her father and grandfather have been proudly wearing their watches for years, even though her grandfather's watch loses 5 minutes per hour, and her father's watch gains 5 minutes per hour. Yesterday evening, they both took off their watches and Teodora secretly set them to the correct time at 9 p.m. When her grandfather woke up the next morning, his watch showed 7:05 a.m. What time did her father's watch show?

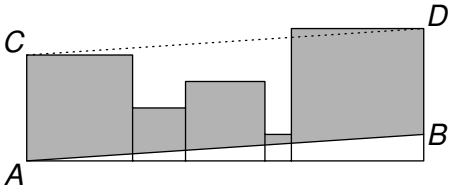
(**A**) 8:05 a.m. (**B**) 8:35 a.m. (**C**) 8:55 a.m. (**D**) 9:10 a.m. (**E**) 9:25 a.m.

B8 On the right are three cheese cubes, each made from smaller cheese cubes of equal size. A mouse eats 40 % of the smallest cheese cube, 40 % of the middle-sized one and 20 % of the largest one. What percentage of the total amount of cheese did the mouse eat?



(**A**) 35 % (**B**) 32 % (**C**) 30 % (**D**) 27 % (**E**) 25 %

B9 The figure shown is made using five squares with areas of $1\,\text{m}^2$, $4\,\text{m}^2$, $9\,\text{m}^2$, $16\,\text{m}^2$ and $25\,\text{m}^2$. Adjacent squares touch, and their lower sides all lie on a common line. The line segments $\overline{AB}$ and $\overline{CD}$ in the diagram are parallel to each other.
What is the area of the shaded region?



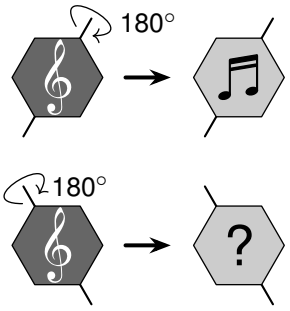
(**A**) $44.5\,\text{m}^2$ (**B**) $45.5\,\text{m}^2$ (**C**) $46.5\,\text{m}^2$ (**D**) $47.5\,\text{m}^2$ (**E**) $48.5\,\text{m}^2$

B10 A natural number has a 1 in the ones column. Johannes removes this digit to get a new number that is 2026 less than the original number. What is the sum of the digits of the original number?

(**A**) 9 (**B**) 10 (**C**) 11 (**D**) 12 (**E**) 13

5 point problems

C1 Ludwig has a hexagonal badge with a white clef on the front. The upper picture on the right shows what he sees when he turns his badge about the marked axis to show its back. What does Ludwig see when he turns the badge about the axis shown in the lower picture?

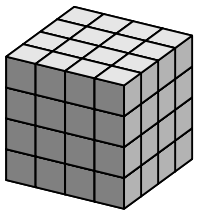


(**A**) 
(**B**) 
(**C**) 
(**D**) 
(**E**) 

C2 Ayse withdraws €200 from a cash machine. The machine can give any number of €10, €20 and €50 banknotes. How many ways can €200 be made using these banknotes?

(**A**) 17 (**B**) 19 (**C**) 23 (**D**) 29 (**E**) 31

C3 The large cube shown has a side length of 4 cm and is made from smaller cubes with a side length of 1 cm. What is the minimum number of small cubes that need to be removed from the outermost layer of the large cube to increase the surface area of the shape by 50 %?

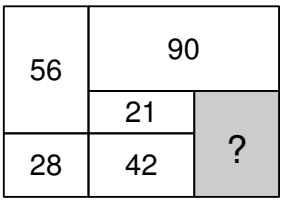


(**A**) 8 (**B**) 10 (**C**) 12 (**D**) 16 (**E**) 18

C4 Mariam, Ria and Emma donate to an animal shelter. Mariam gives €9 less than Ria and Emma's total donation. Ria gives €1 more than Emma and Mariam's total donation.
How much does Emma donate to the animal shelter?

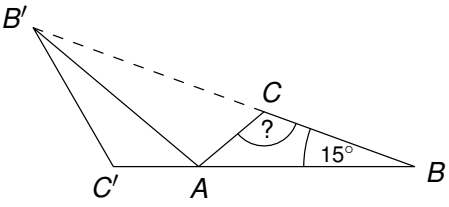
(**A**) €10 (**B**) €8 (**C**) €7 (**D**) €5 (**E**) €4

C5 The large rectangle shown is divided into six smaller rectangles. The areas of five of these small rectangles are given (*diagram not to scale*).
What is the area of the grey rectangle?



(**A**) 25 (**B**) 27 (**C**) 30 (**D**) 32 (**E**) 36

C6 In the triangle ABC, the angle $\angle CBA$ is 15° (*diagram not to scale*). Rotating triangle ABC around corner A creates triangle $AB'C'$. The points C', A and B lie on a straight line, and the points B', C and B also lie on a straight line. What is the size of the angle $\angle ACB$?

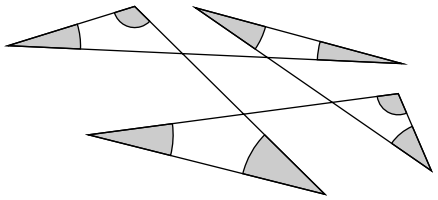


(**A**) 105° (**B**) 115° (**C**) 120° (**D**) 135° (**E**) 140°

C7 There are more than 23 and fewer than 29 children in my class. Everyone likes maths or French or even both maths and French. Maths is liked by twice as many children as French. The number of children that like both maths and French is the same as the number of children that like only French.
How many children are in my class?

(**A**) 24 (**B**) 25 (**C**) 26 (**D**) 27 (**E**) 28

C8 What is the sum of the 8 marked angles in the picture?



(**A**) 270° (**B**) 300° (**C**) 360° (**D**) 450° (**E**) 540°

C9 Pepe, Quinn and Rosa take part in a raffle and each chooses 10 tickets. They notice that Pepe has twice as many winning tickets as Rosa has losing tickets. Pepe's number of losing tickets, on the other hand, is only half the number of Quinn's winning tickets. Also, the total number of losing tickets is even.
How many winning tickets did the three of them draw in total?

(**A**) 22 (**B**) 20 (**C**) 18 (**D**) 16 (**E**) 14

C10 Anna, Elsa and their mother play a reasoning game. Their mother selects one sweet from the options shown below. She tells Anna the pattern on the wrapper and tells Elsa the shape of the sweet. The mother first asks: "Do you know which sweet I picked?" Both Anna and Elsa answer: "No." The mother asks a second time: "Now do you know?" Again both answer: "No." The mother now asks a third time: "Now do you know?" Now Anna and Elsa both shout at the same time: "Yes!"
Which sweet did their mother select?

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