Year 3 and 4 (ENGLISH VERSION)

Thursday, 17th March 2022   Time allowed: 75 minutes

1. For each question exactly one of the 5 options is correct.
2. Each participant is given 24 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 120, the minimum is 0.
3. Calculators and other electronic devices are not allowed.

3 point problems

A1 Finja uses matchsticks to make the number 2022. She has made a 2 and the 0 already. How many matchsticks does Finja need in total?

(**A**) 21   (**B**) 23   (**C**) 24   (**D**) 27   (**E**) 29
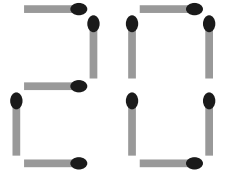
A2 Erik has put together a puzzle. One piece is still missing. There must always be different numbers in neighbouring squares. Which piece fits?
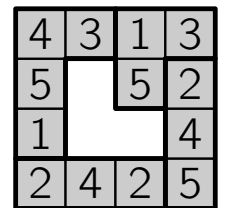
(**A**) [5 / 1 2]   (**B**) [3 / 2 4]   (**C**) [2 / 3 1]   (**D**) [2 / 1 4]   (**E**) [3 / 4 1]
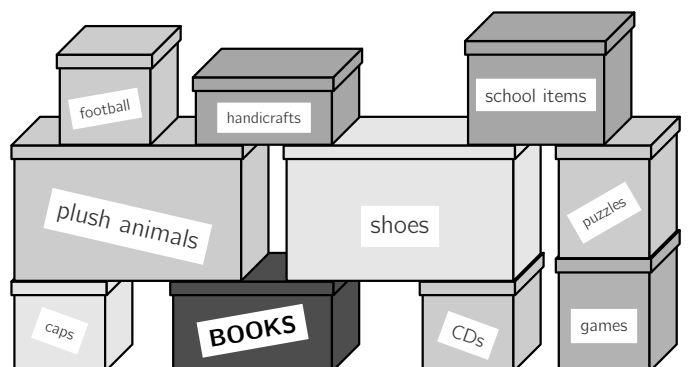
A3 Which two numbers can be written in the two boxes so that the calculation is correct?

$$20 + \square = 22 + \square$$

(**A**) 1 and 4   (**B**) 4 and 3   (**C**) 2 and 7   (**D**) 5 and 3   (**E**) 8 and 9

A4 Lena is looking for her favourite book. Her family has just moved. There are lots of boxes piled up in the hallway.
How many boxes does Lena have to put away to get to the box with the books?

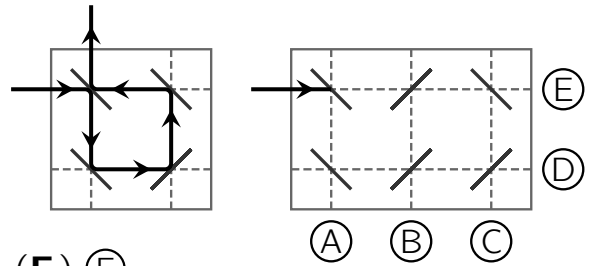(**A**) 3   (**B**) 4   (**C**) 5   (**D**) 6   (**E**) 7

A5 There should be exactly 2 coins in each horizontal row and in each vertical row. To achieve this, one coin must be moved to another square. Which one?

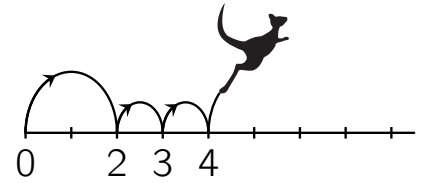(**A**) ⑤   (**B**) ①   (**C**) ④   (**D**) ⑦   (**E**) ③
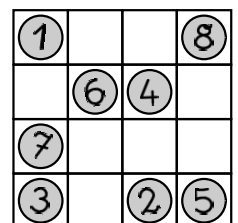
A6 A laser beam is deflected as in the diagram on the left. All walls have mirrors on both sides. At which letter will the laser beam end in the diagram on the right?
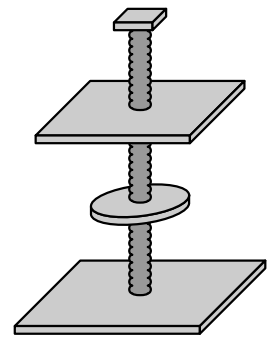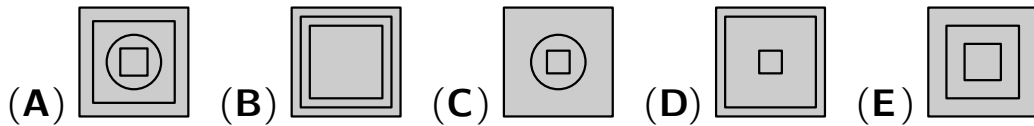
(**A**) Ⓐ   (**B**) Ⓑ   (**C**) Ⓒ   (**D**) Ⓓ   (**E**) Ⓔ

A7 Kangaroo Kai jumps on the number line from 0 to 16. He always makes one long jump and then two short jumps, as shown. How many jumps does he make in total?
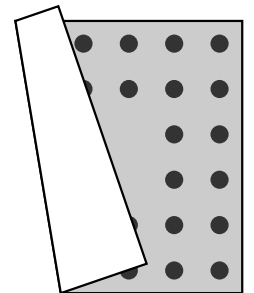
(**A**) 7   (**B**) 8   (**C**) 10   (**D**) 11   (**E**) 12

A8 My parents have built a scratching post for our cat Sissi. What does the scratching post look like from above?

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

4 point problems

B1 The wind has folded over part of our picnic blanket. It has the shape of a square, and on each side there are two rows with the same number of dark dots. How many dark dots are there in total?

(**A**) 34   (**B**) 32   (**C**) 30   (**D**) 28   (**E**) 26

B2 I have to cut four 2-metre long wooden strips into pieces. Each piece should be half a metre long. How many cuts do I need to make?

(**A**) 10   (**B**) 12   (**C**) 14   (**D**) 18   (**E**) 20

B3 Five friends each drew a picture. Leon did not draw any ducks. There is a tree on Elisa's picture. Paula has drawn exactly two animals. Mike drew a car. There are sheep in Yusuf's picture. Which picture is Leon's?

(**A**)   (**B**)   (**C**)   (**D**)   (**E**)
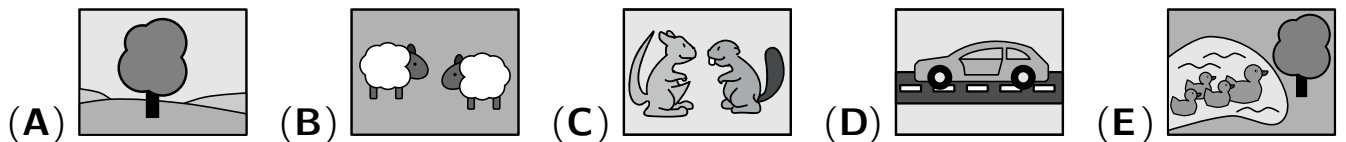
B4 The Wood family went mushroom picking. Of the parents and the four children, one found 10 mushrooms and the others found 8, 6, 5, 4 and 2. The four children found a total of 22 mushrooms. How many mushrooms did the parents find?

(**A**) 2 and 8   (**B**) 4 and 5   (**C**) 5 and 8   (**D**) 6 and 8   (**E**) 6 and 10

B5 In a bicycle race, the biker with starting number 1 is leading, followed by 2, 3, 4 in this order. Then the last of the four bikers overtakes the two bikers in front of him. And just before the finish line, the biker who is now second to last overtakes the two bikers in front of him. In which order do the bikers cross the finish line?

(**A**) 2, 1, 4, 3   (**B**) 3, 2, 1, 4   (**C**) 4, 1, 2, 3   (**D**) 2, 3, 4, 1   (**E**) 1, 2, 4, 3

B6 Leo used number cards to make an equation. Then he flipped over four cards. What is the sum of the numbers on the flipped cards?

$$\square\square\square + \square64 = 572$$

(**A**) 8   (**B**) 9   (**C**) 11   (**D**) 13   (**E**) 14

B7 My father baked a pizza and cut it into 12 pieces. The toppings are peppers, corn and spinach, and there are no pieces without topping. On 3 pieces there are only peppers. On 7 pieces there is corn, and on 5 pieces there is spinach.
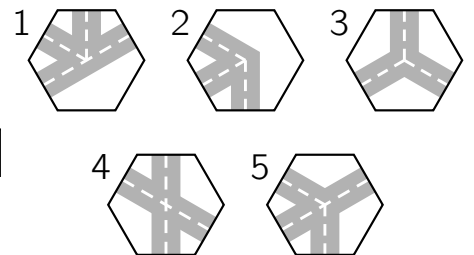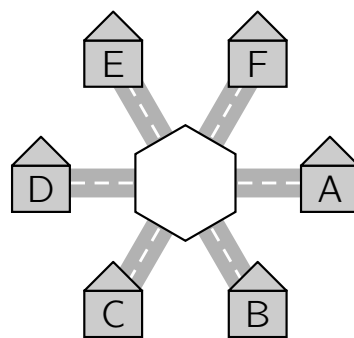How many pieces have corn <u>and</u> spinach on them?

(**A**) 1   (**B**) 2   (**C**) 3   (**D**) 4   (**E**) 5

B8 A caterpillar curled up to sleep. What could this look like?

(**A**)   (**B**)   (**C**)   (**D**)   (**E**)
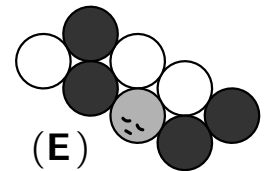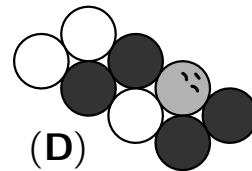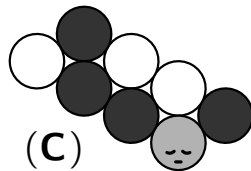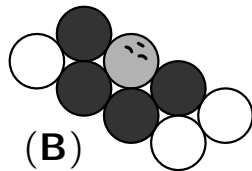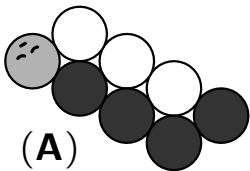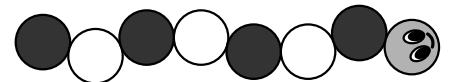
5 point problems

C1 Two of the pieces shown on the right can be placed in the middle so that house A is connected to the houses B and E, but not to house D.
Which two pieces are these?

(**A**) 1 and 2   (**B**) 2 and 3   (**C**) 1 and 4   (**D**) 4 and 5   (**E**) 1 and 5

C2 Three primary schools are competing in the dodgeball district finals. Each team plays every other team exactly once. The winner of a game gets 3 points. The loser gets 0 points. If a game is drawn, both teams get 1 point each. Which number of points is it impossible for any team to have at the end of the competition?

(**A**) 1   (**B**) 2   (**C**) 4   (**D**) 5   (**E**) 6

C3 The cube in the picture is built from the three kinds of wooden blocks shown. How many of the small white cubes are used?

    (**A**) 8   (**B**) 11   (**C**) 13

    (**D**) 16   (**E**) 19
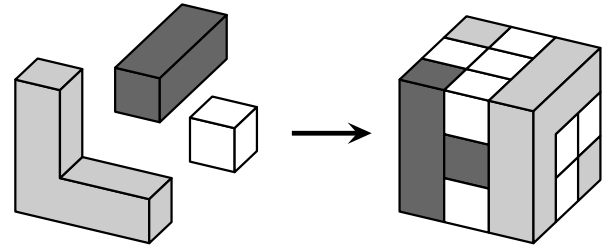
C4 Five friends each have an aquarium at home. Lia has 2 fish more than Juna. Isabel has 3 fish fewer than Lia. Charlotte has one fish more than Isabel and 3 fish fewer than Alice. Two girls have the same number of fish. Which two?

    (**A**) Charlotte and Juna   (**B**) Charlotte and Lia   (**C**) Lia and Alice

   (**D**) Juna and Alice   (**E**) Alice and Isabel

C5 In the garden, a snail comes across a pyramid made of cubes with a side-length of 10 cm. It takes a strong run-up and creeps up and across the middle of the pyramid. The trail of slime it leaves on the pyramid can be seen on the right. What is the total length of the trail on the pyramid?

from above

    (**A**) 50 cm   (**B**) 60 cm   (**C**) 70 cm   (**D**) 80 cm   (**E**) 90 cm
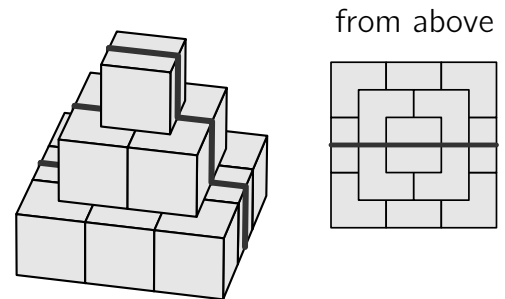
C6 Of the figures shown, I want to select some so that I have 2 dark, 2 large and 2 round figures. What is the <u>minimum number</u> of figures I <u>have</u> to choose?

    (**A**) 2   (**B**) 3   (**C**) 4   (**D**) 5   (**E**) 6
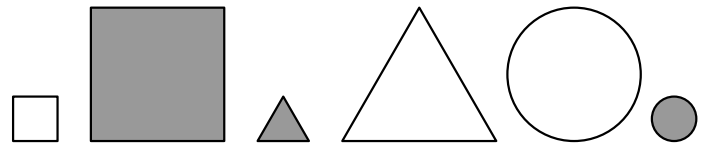
C7 Gert the grasshopper hops up a staircase from the bottom to the top and back down again. He always takes 2 steps at a time upwards and 3 steps at a time downwards. Gert needs a total of 40 hops. How many steps does the staircase have?

    (**A**) 36   (**B**) 42   (**C**) 44   (**D**) 48   (**E**) 54

C8 Kate wants to write a number in each square in the diagram on the right. In squares of the same colour she must write the same number. The sums of the numbers in the rows are given on the right. Which number must Kate write in the dark grey square?

→ 34
→ 32
→ 26

    (**A**) 6   (**B**) 8   (**C**) 10   (**D**) 12   (**E**) 14