Winter Round 2019./2020.

SCHOOL	
TEAM NUMBER	
CATEGORY	**Year 7**
COMPETITION COMISSIONER	

NO.	FIRST AND LAST NAME OF PARTICIPANT	YEAR	FIRST AND LAST NAME OF MENTOR
1.			
2.			

ANSWERS:

YEAR 7					
7.1.		7.4.		7.8.	
7.2.		7.5.		7.9.	
7.3.		7.6.		7.10.	
		7.7.		7.11.	
				7.12.	
				7.13.	
				7.14.	
				7.15.	

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CORRECT ANSWER: 10 POINTS	ANSWER „E“: 0 POINTS	ELSE: –2 POINTS

7.1. Bruno is 126 cm tall, Tomo and Janko are 130 cm tall, Marin is 129 cm, Nera and Tihana are 175 cm and Ivana is 159 cm. In how many ways can they stand in line if they have to line up in order by height, shortest to tallest?

A.	**B.**	**C.**	**D.**	**E.** We do not wish to answer
1	2	4	6	

7.2. In the cake shop, a chesnut cake costs 15 kn, and chesnut puree costs 20 kn. How many pieces of chesnut cake did mum buy if she spent 85 kn on chesnut cakes and chesnut purees?

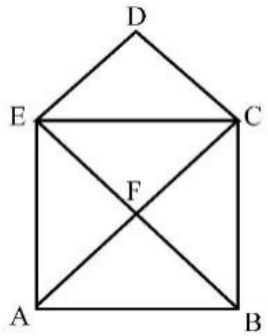
A.	**B.**	**C.**	**D.**	**E.** We do not wish to answer
3	2	1	It cannot be determined	

7.3. What is the area of triangle ABC if A (–3, 4), and B i C are the reflections of point A over the coordinate axes.

A.	**B.**	**C.**	**D.**	**E.** We do not wish to answer
24 squared units	12 squared units	10 squared units	6 squared units	

CORRECT ANSWER: 10 POINTS	ANSWER „E“: 0 POINTS	ELSE: –2 POINTS

7.4. Katherine wishes to draw a figure as shown in the figure in one move, that is, so that she doesn't lift her pen from the paper and that she doesn't draw the same line twice. From how many of the given 6 points can she start drawing, to be able to do this?



A.	**B.**	**C.**	**D.**	**E.** We do not wish to answer
0	2	4	6	

7.5. What is the product $x \times y$ of the solutions of the equations $3.2 + 0.8 \times \frac{3}{4}x = 8$ i $3 - \frac{y-1}{4} = \frac{3}{2}$?

A.	**B.**	**C.**	**D.**	**E.** We do not wish to answer
16	14	40	56	

7.6. Which of these statements is always correct?

A. Out of six consecutive natural numbers, at least two of them are prime.	**B.** Out of six consecutive natural numbers, at mpst two of them are prime.	**C.** The sum of any six consecutive natural numbers is divisible by 6.	**D.** None of the aforementioned	**E.** We do not wish to answer

7.7. The fraction $\frac{a}{b}$ is six times greater if we add the denominator to the numerator and double the denominator. What can $a+b$ be equal to?

A. 6	**B.** 12	**C.** 11	**D.** None of the aforementioned	**E.** We do not wish to answer

CORRECT ANSWER: 20 POINTS	**ANSWER „E“: 0 POINTS**	**ELSE: –4 POINTS**

7.8. A right-angled triangle *ABC* is given and its legs have the lengths of 2 cm and 3 cm. Points *A*, *B* and *C* are also vertices of a paralellogram. Draw all such parallelograms. What is the sum of the areas of all such parallelograms?

A. 18 cm^2	**B.** 12 cm^2	**C.** 9 cm^2	**D.** It cannot be determined	**E.** We do not wish to answer

7.9. The *x*-coordinate of the point $A\left(\frac{2}{3}a-b,\frac{3}{2}b-a\right)$ is twice its *y*-coordinate. What is $\frac{a+b}{a-b}$?

A. –5	**B.** 5	**C.** 6	**D.** It cannot be determined	**E.** We do not wish to answer

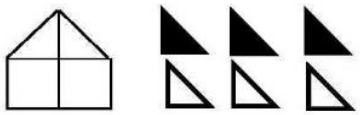
7.10. Hansel and Gretel want to eat all the candy off of the witch's house. If Hansel eats the candy by himself, he needs 9 days, and Gretel would need 12 days by herself. During the first foru days, they ate together, and then the witch came and ate the rest of the candy by herself in two days. How many days at least would the witch need to eat all the candy off of her house by herself?

A. 6	**B.** 7	**C.** 9	**D.** 10	**E.** We do not wish to answer

7.11. What is the angle between the diagonals of a trapezium whose side lengths are 3 cm, 3 cm, 3 cm and 6 cm?

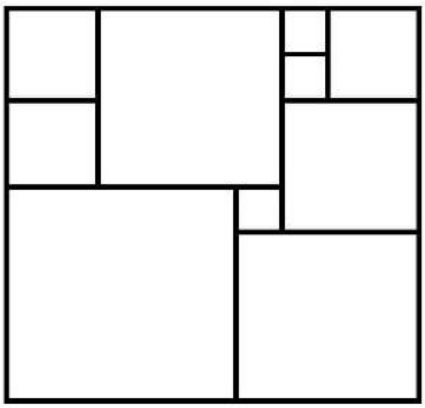
A. 90°	**B.** 80°	**C.** 60°	**D.** It cannot be determined	**E.** We do not wish to answer

7.12. On the floor of the hall there is a mosaic in the shape shown below, divided into two square parts and two right-angled triangles. The mosaic can be made using exactly 6 tiles in the shape of an isosceles right-angled triangle, three of them white and three black. If each square part must be made of exactly one white and one black tile, in how many ways can such a mosaic be made?



A.	**B.**	**C.**	**D.**	**E.**
12	64	32	It cannot be determined	We do not wish to answer

7.13. All the quadrilaterals shown in the figure are squares. If the perimeter of the biggest one is 144 cm, what is the perimeter of the smallest one?



A.	**B**.	**C**.	**D**.	**E**.
12	16	20	24	We do not wish to answer

7.14. The sum of two natural numbers is 1882. If we add the digit 8 at the end of the first number, we will get a number that is twice as big as the second number. What is the sum of the digits of the second number?

A.	**B**.	**C**.	**D**.	**E**.
19	23	21	It cannot be determined	We do not wish to answer

7.15. What is the sum of all three-digit numbers with different and odd digits?

A.	**B.**	**C.**	**D.**	**E.**
33 300	16 650	66 600	None of the aforementioned	We do not wish to answer