



Spring Round 2019./2020.

SCHOOL	
TEAM NUMBER	
CATEGORY	Year 8
COMPETITION COMMISSIONER	

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

ANSWERS:

Year 8					
8.1.		8.4.		8.8.	
8.2.		8.5.		8.9.	
8.3.		8.6.		8.10.	
		8.7.		8.11.	
				8.12.	
				8.13.	
				8.14.	
				8.15.	

I ♥ **MAT**ematika

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CORRECT ANSWER: 10 POINTS	ANSWER „E“: 0 POINTS	ELSE: -2 POINTS
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8.1. Mary has 18 carrots and she wants to give them to her bunnies. If Mary has 4 bunnies (Miki, Tiki, Siki, and Ziki), and wants to give each at least 3 carrots and at most 5 carrots, in how many ways can she give all 18 carrots to her bunnies?

A. 6	B. 4	C. 10	D. None of the aforementioned	E. We do not wish to answer.
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8.2. Mum went to the market and bought 3 kg of apples and 3 kg of potatoes and she paid 27,00 kn for that. If a kilogram of apples costs 3 kn more than a kilogram of potatoes, how many kuna would she pay for 2 kg of apples and 3 kg of potatoes?

A. 20	B. 18	C. 24	D. 21	E. We do not wish to answer.
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8.3. What is the central angle of the sector whose area is 30 % of the area of the whole circle?

A. 108°	B. 120°	C. 150°	D. 60°	E. We do not wish to answer.
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CORRECT ANSWER: 20 POINTS	ANSWER „E“: 0 POINTS	ELSE: -4 POINTS
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8.4. Which is greater, A or B ?

$$A = \frac{12345678}{12345677}, B = \frac{12345677^2 - 1}{12345677^2 - 12345677}$$

A. A	B. B	C. They are equal.	D. It cannot be determined.	E. We do not wish to answer.
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8.5. If the lengths of the sides of a triangle are $\sqrt{3}$, $2\sqrt{3}$ and 3, what is the size of the smallest angle of the triangle?

A. 30°	B. 45°	C. 60°	D. It cannot be determined.	E. We do not wish to answer.
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8.6. An isosceles triangle ABC with the angle of size 40° opposite the base \overline{AB} is given. An isosceles triangle ABD with the angle of size 65° at the base \overline{BD} is drawn on the same side of the plane, considering the line AB . What is the size of angle $\sphericalangle DAC$?

A. 40°	B. 35°	C. 20°	D. It cannot be determined.	E. We do not wish to answer.
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8.7. List all the three-digit multiples of number 12 with the tens digit equal to 0. What is their sum?

A. 4 536	B. 3 012	C. 4 236	D. None of the aforementioned	E. We do not wish to answer.
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CORRECT ANSWER: 30 POINTS

ANSWER „E“: 0 POINTS

ELSE: -6 POINTS

8.8. The price of a shirt has increased by 8 %, and after a month by another 2 %. If Tihana wishes to buy the shirt with the price from before both of the increases, what is the discount (rounded to the nearest whole number) she should get?

A. 10 %	B. 9 %	C. 8 %	D. 11 %	E. We do not wish to answer.
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8.9. For which value of a will the equation $x^2 + 2x = a$ have integer solutions?

A. $a = 25$	B. $a = 23$	C. $a = 49$	D. $a = 63$	E. We do not wish to answer.
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8.10. The triangle ACE is inscribed into the regular hexagon $ABCDEF$. What is the ratio of the perimeters of the hexagon and the triangle?

A. $1:\sqrt{3}$	B. $2:\sqrt{3}$	C. 1:2	D. 1:3	E. We do not wish to answer.
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8.11. The sum of two natural numbers is 2 000. If we erase the digit 7, which is at the ones place, from one number, the sum of the two numbers will be 589. What is the sum of the digits of the second number?

A. 19	B. 20	C. 10	D. It cannot be determined.	E. We do not wish to answer.
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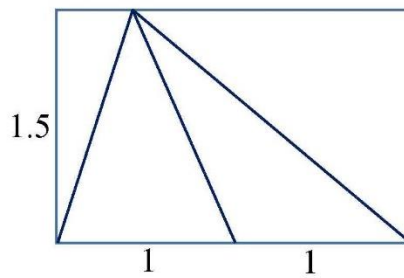
8.12. What is the sum of all three-digit number with different and even digits that are not equal to zero?

A. 13 320	B. 16 650	C. 22 200	D. None of the aforementioned	E. We do not wish to answer.
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8.13. Dino plays football every second day. Damir plays football every third day. Dubravko plays every sixth day and Donat once a week. How many times a year will the four of them play on the same day at the football pitch?

A. 6	B. 7	C. 8	D. 9	E. We do not wish to answer.
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8.14. What is the sum of the areas of all the triangles on the image?



A. 6	B. 3	C. 4.5	D. It cannot be determined.	E. We do not wish to answer.
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8.15. How many three-digit numbers are divisible by both 4 and 6?

A. 73	B. 74	C. 75	D. 76	E. We do not wish to answer.
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