



Autumn 2018./2019.

SCHOOL	
TEAM NUMBER	
CATEGORY	D1
COMMISSIONER	

	Student's name and surname	Year	Mentor's name and surname
1.			
2.			
3.			
4.			

ANSWERS:

3RD YEAR				4TH YEAR			
3.1.		3.11.		4.1.		4.11.	
3.2.		3.12.		4.2.		4.12.	
3.3.		3.13.		4.3.		4.13.	
3.4.		3.14.		4.4.		4.14.	
3.5.		3.15.		4.5.		4.15.	
3.6.		3.16.		4.6.		4.16.	
3.7.		3.17.		4.7.		4.17.	
3.8.		3.18.		4.8.		4.18.	
3.9.		3.19.		4.9.		4.19.	
3.10.		3.20.		4.10.		4.20.	

I ♥ **MAT**ematika

www.matzelcic.com.hr

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Translator: Josip Kličinović, mathematics professor

CORRECT ANSWER: 10 pts	ANSWER „E“ : 0 pts	FALSE ANSWER: -2 pts
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3.1. Evaluate $2+2\cdot 2:2\cdot 2$

A. 6	B. 3	C. 2	D. 4	E. We don't want to answer
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3.2. Increase the sum of 35 and 12 by their difference. What is the result?

A. 94	B. 0	C. 70	D. 24	E. We don't want to answer
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3.3. For two lines that don't have any common point we say that they are:

A. perpendicular	B. parallel	C. same	D. Can't be determined	E. We don't want to answer
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3.4. How many two-digit numbers are there, so that sum of their digits is 7?

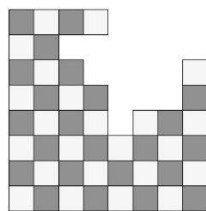
A. 8	B. 7	C. 4	D. 3	E. We don't want to answer
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3.5. Malteser Bubi ate three dog cookies, German shepherd Rex three times more than him, and chihuahua Luna ate three times fewer dog cookies than Bubi. How many cookies in total did they eat?

A. 39	B. 10	C. 13	D. Can't be determined	E. We don't want to answer
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CORRECT ANSWER: 20 pts	ANSWER „E“ : 0 pts	FALSE ANSWER : -4 pts
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3.6. John used black and white tiles to make a chessboard. His little brother Charles took several tiles (look at the picture!). How many black tiles did Charles take?



A. 18	B. 9	C. 8	D. 7	E. We don't want to answer
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3.7. The Croatian football team landed at the Zagreb Airport at 3:31 pm. They arrived at the main square at 9:25 pm. How many minutes did they travel from the airport to the main square?

A. Less than 300 min	B. More than 400 min	C. 354 min	D. 366 min	E. We don't want to answer
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3.8. How many two-digit numbers are there, so that sum of their digits is equal to the tens digit?

A. 10	B. 9	C. 8	D. Can't be determined	E. We don't want to answer
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3.9. Elisabeth is drawing symbols in the following sequence ♣♦♠♥♣♦♠♥... What will be the 17th symbol?

A. ♣	B. ♦	C. ♠	D. ♥	E. We don't want to answer
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3.10. There are 28 students in the classroom. 15 of them like to eat grapes, and 23 of them like to eat bananas. What is the least number of students that like to eat both grapes and bananas?

A. 38	B. 15	C. 10	D. Can't be determined	E. We don't want to answer
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3.11. On Saturday, Sophia read a book from the 45th to the 73rd page. How many pages did Sophia read?

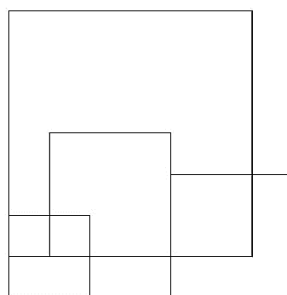
A. 28	B. 39	C. 38	D. 29	E. We don't want to answer
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3.12. In Martha's family, each sister has two sisters and one brother. How many children are there in her family?

A. 8	B. 4	C. 6	D. 5	E. We don't want to answer
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CORRECT ANSWER: 30 pts	ANSWER „E“ : 0 pts	FALSE ANSWER : -6 pts
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3.13. How many quadrilaterals are there in the following picture?



A. 6	B. 7	C. 8	D. 9	E. We don't want to answer
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3.14. Domino tiles are small rectangular tiles split into two squares. These squares can be empty or have one to six dots. How many different domino tiles exist?



A. 49	B. 36	C. 18	D. 28	E. We don't want to answer
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3.15. Eve has 16 colored papers. She cuts some of these papers into three parts. After that, Eve has 26 papers. How many papers did she cut?

A. 5	B. 10	C. 6	D. Can't be determined	E. We don't want to answer
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3.16. Allan tossed a dice (each side has one to six dots), and he wrote a result. In five tosses, the sum of all results was 28. How many times did the dice show the number 3?

A. 0	B. 1	C. 2	D. Can't be determined	E. We don't want to answer
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3.17. Calculate the sum of all odd three-digit numbers with different digits (digits can't be repeated) written using digits 2, 3, and 5.




A. 2220	B. 1688	C. 1336	D. 1101	E. We don't want to answer
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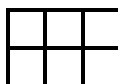
3.18. Susan lives on the farm, and she has many animals: 4 cows, 12 hens, 7 ducks, 5 pigs, 2 dogs, 3 cats, 2 fish, and 2 hamsters. How many legs do her animals have in total?

A. 98	B. 102	C. 100	D. 96	E. We don't want to answer
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3.19. If $\star + \blacktriangle + 5 + \star + 2 + \star = \star + \star + 10 + \blacktriangle$, calculate \star ?

A. 3	B. 4	C. 6	D. Can't be determined	E. We don't want to answer
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3.20. Anna has three rectangular tiles in different colors: blue , yellow  and red . How many different ways are there to place these tiles in order to cover a board with two rows and three columns?



A. 20	B. 18	C. 12	D. 6	E. We don't want to answer
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CORRECT ANSWER : 10 pts**ANSWER „E“ : 0 pts****FALSE ANSWER : -2 pts**

4.1. The number from which we subtract is called:

A. minuend	B. addend	C. dividend	D. subtrahend	E. We don't want to answer
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4.2. Which statement is incorrect?

A. A line segment is part of a line	B. A ray is part of a line	C. A line segment is part of a ray	D. A line is part of a ray	E. We don't want to answer
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4.3. What is the remainder when dividing 345 by 7?

A. 1	B. 2	C. 3	D. 4	E. We don't want to answer
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4.4. Which of the following shapes have the least number of vertices?

A. Circle	B. Square	C. Triangle	D. Rectangle	E. We don't want to answer
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4.5. In some restaurant the price of a hamburger is 8 kuna, fries 9 kn, and juice is 12 kn. The menu that combines hamburger, fries, and juice is 24 kn. How much money will a family of three save if they order three menus instead of separate products?

A. 15 kn	B. 18 kn	C. 12 kn	D. 16 kn	E. We don't want to answer
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CORRECT ANSWER: 20 pts**ANSWER „E“ : 0 pts****FALSE ANSWER : -4 pts**

4.6. World champion Tin Srbić practises every day, except on Sundays, from 7:15 am to 9:45 am, and then again from 4:45 pm to 7 pm. How much time does he spend training every week?



A. 18 hours 45 minutes	B. 22 hours 30 minutes	C. 23 hours 45 minutes	D. 28 hours 30 minutes	E. We don't want to answer
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4.7. Domino tiles are small rectangular tiles split into two squares. These squares can be empty or have one to six dots. How many different domino tiles exist with a square that has five dots?



A. 56	B. 45	C. 35	D. Less than 20	E. We don't want to answer
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4.8. Friends Allan, Bob, Charlie, and Dave reserved four consecutive seats in the cinema. Charlie is sitting to Bob's left. Allan is sitting at the end of the row. No one is sitting between Bob and Dave. Allan and Bob are sitting next to each other. Which one of them is sitting on the leftmost seat?

A. Allan	B. Bob	C. Charlie	D. Dave	E. We don't want to answer
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4.9. Five years ago the sum of Marc's parents' ages was 50 years. What will the sum of their ages be in 7 years?

A. 74	B. 64	C. 62	D. Can't be determined	E. We don't want to answer
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4.10. Granny Smith gave her grandchildren 7 chocolates, 13 fruits, and 8 menthol candies. All of them had the same number of candies. What number of grandchildren is not possible?

A. 2	B. 4	C. 6	D. 7	E. We don't want to answer
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4.11. In how many different ways can we fill in the table with two rows and two columns with numbers from 1 to 6, so that the sum of each row and each column is 6?



A. 6	B. 5	C. 4	D. Nothing of above	E. We don't want to answer
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4.12. Write down the first number greater than 2018 that has the same digits as 2018. What is the difference between these two numbers?

A. Less than 50	B. 63	C. 90	D. Greater than 100	E. We don't want to answer
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CORRECT ANSWER: 30 pts ANSWER „E“ : 0 pts FALSE ANSWER : -6 pts

4.13. How many three-digit numbers are there, so that their value won't change if we change the position of the hundreds and the units digit?

A. 90	B. 100	C. 81	D. 9	E. We don't want to answer
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4.14. In his checkered notebook Luke colored a big square in green color. That big square has several smaller squares within itself. After that he colored 24 small squares in yellow, so he expanded the big green square by one column and one row on each side. How many small squares did he color?

A. 36	B. 49	C. 25	D. Can't be determined	E. We don't want to answer
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4.15. Which one of the following statements doesn't have to be true?

A. Number divisible by 4 is even	B. Number divisible by 7 is odd	C. Number divisible by 10 is even	D. Every number is divisible by 1	E. We don't want to answer
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4.16. Mary attends a knitting class on Fridays, but only on even dates. She pays for the course on the fifth day of the month. If Mary went to her class three times in one month, what was the day in week that she paid for the course?

A. Monday	B. Wednesday	C. Friday	D. Can't be determined	E. We don't want to answer
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4.17. A square is divided by three parallel lines into four different rectangles. If the sum of perimeters of all rectangles is 150 cm, what is the perimeter of the square?

A. 15 cm	B. 60 cm	C. 25 cm	D. Can't be determined	E. We don't want to answer
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4.18. Luke's book has 123 pages. How many digits in total were used to mark all the pages of that book?

A. 122	B. 276	C. 258	D. 261	E. We don't want to answer
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4.19. For the birthday party, organizers put five round tables, and around each table they put chairs numerated with numbers 1, 2, 3, etc. If chair number 4 is opposite to chair number 10, how many chairs are there in total?

A. 60	B. 50	C. 65	D. Can't be determined	E. We don't want to answer
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4.20. In how many different ways can Jan pay for chocolate worth 12 kuna, if she has coins of 1, 2, and 5 kn?

A. 10	B. 13	C. 8	D. 12	E. We don't want to answer
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