



Winter 2018./2019.

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| SCHOOL | |
| TEAM NUMBER | |
| CATEGORY | D, 4rd year |
| COMMISSIONER | |

| | Student's name and surname | Year | Mentor's name and surname |
|----|----------------------------|------|---------------------------|
| 1. | | | |
| 2. | | | |

ANSWERS:

| 4TH YEAR | | | | | |
|----------|--|------|--|-------|--|
| 4.1. | | 4.6. | | 4.13. | |
| 4.2. | | 4.7. | | 4.14. | |
| 4.3. | | 4.8. | | 4.15. | |
| | | 4.9. | | 4.16. | |
| | | | | 4.17. | |
| | | | | 4.18. | |
| | | | | 4.19. | |
| | | | | 4.20. | |

I ♥ **MATematika**

www.matzelcic.com.hr

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|-------------------------------|---------------------------|-----------------------------|
| CORRECT ANSWER: 10 pts | ANSWER „E“ : 0 pts | FALSE ANSWER: -2 pts |
|-------------------------------|---------------------------|-----------------------------|

4.1. At the fall round of the MAT league 1770 students competed. The most students were from the Elementary school of Župa dubrovačka from Mlin, 53 students. From the Elementary school of Alojzije Stepinac 52 students competed, and from the Elementary school of Antun Gustav Matoš also 52 students competed. How many students competed that are not from these three elementary schools?

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|-------------------|-------------------|-------------------|-------------------|-----------------------------------|
| A. 1717 | B. 1665 | C. 1613 | D. 1561 | E. We don't want to answer |
|-------------------|-------------------|-------------------|-------------------|-----------------------------------|

4.2. The square in the picture **cannot** be divided with a line into:



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|----------------------------|-----------------------------|--------------------------|--|-----------------------------------|
| A. Two triangles | B. Two rectangles | C. Two squares | D. Two quadrilaterals with different side sizes | E. We don't want to answer |
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4.3. What number do we get if we take the hundreds digit of number 285 748 and sum it up with the ten thousands digit of number 947 582 and then double it.

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|-----------------|-----------------|-----------------|-----------------|-----------------------------------|
| A. 22 | B. 28 | C. 20 | D. 26 | 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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4.6. How many months in a leap year do not have a day in their week (Monday, Tuesday, ...) repeat five times?

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|----------------|----------------|----------------|----------------|-----------------------------------|
| A. 0 | B. 1 | C. 2 | D. 3 | E. We don't want to answer |
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4.7. For how many six digit numbers is the right digit of every two adjacent digits for one bigger from the left one?

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|----------------|----------------|----------------|-----------------|-----------------------------------|
| A. 4 | B. 5 | C. 9 | D. 10 | E. We don't want to answer |
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4.8. Domino blocks are small, rectangular and dividied into 2 squares which are either empty or have from one to six dots. How many domino blocks are there that have a square with 2 or 5 dots?



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|-----------------|-----------------|-----------------|---------------------------|-----------------------------------|
| A. 77 | B. 84 | C. 91 | D. Less than 40 | E. We don't want to answer |
|-----------------|-----------------|-----------------|---------------------------|-----------------------------------|

4.9. Justin decided to save money up so every morning he put 5 kunas in his piggy bank. But, before going to training, every afternoon he took 2 kunas out of the bank to buy a lollipop. How many days does Justin have to save money up to save up 100 kunas?

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|-----------------|-----------------|-----------------|-----------------|-----------------------------------|
| A. 33 | B. 34 | C. 30 | D. 26 | E. We don't want to answer |
|-----------------|-----------------|-----------------|-----------------|-----------------------------------|

CORRECT ANSWER: 30 pts ANSWER „E“ : 0 pts FALSE ANSWER : -6 pts

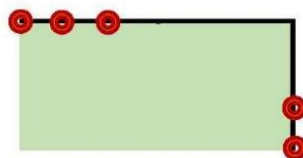
4.13. How many three digit numbers exist that don't all have the same digits, and that don't change their value if we switch the tens and units digit?

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|-----------------|------------------|----------------|-----------------|-----------------------------------|
| A. 90 | B. 100 | C. 9 | D. 81 | E. We don't want to answer |
|-----------------|------------------|----------------|-----------------|-----------------------------------|

4.14. Luke colored a big square in green, in his squared notebook, that consisted of 16 little squares. After that, Luke colored a few more squares yellow, he expanded the green square by two rows and collums on each side. How many squares did Luke color?

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|-----------------|-----------------|-----------------|----------------------------------|-----------------------------------|
| A. 64 | B. 49 | C. 36 | D. Can't be determined | E. We don't want to answer |
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4.15. Wanting to fence off the playground from two sides(like in the picture), Luke placed columns that were 1 meter away from eachother. What is the lenght of the fence if Luke placed 35 columns?



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|-------------------|-------------------|-------------------|----------------------------------|-----------------------------------|
| A. 35 m | B. 33 m | C. 34 m | D. Can't be determined | E. We don't want to answer |
|-------------------|-------------------|-------------------|----------------------------------|-----------------------------------|

4.16. Continue the sequence: 1, 3, 7, 15, 31...

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|-----------------|-----------------|-----------------|-----------------|-----------------------------------|
| A. 47 | B. 63 | C. 57 | D. 53 | E. We don't want to answer |
|-----------------|-----------------|-----------------|-----------------|-----------------------------------|

4.17. Jenny, Lucy and Sofia take lessons two time a week for one class:maths, programming and astronomy. Every day in the week except for Sunday, a lesson from one class takes place, but never the same class two days in a row. Sofia trains soccers on Monday and Wednesday, and on Tuesdays goes to the cinema with Lucy. Jenny has school til late hours on Monday so she doesn't go to lessons then. What girls takes lessons on Friday?

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|--------------------|-------------------|--------------------|----------------------------------|-----------------------------------|
| A. Jenny | B. Lucy | C. Sofia | D. Can't be determined | E. We don't want to answer |
|--------------------|-------------------|--------------------|----------------------------------|-----------------------------------|

4.18. Lukes book has 1234 pages. How many digits in total were used to mark the pages of the book?

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|-------------------|-------------------|-------------------|-------------------|-----------------------------------|
| A. 2224 | B. 3123 | C. 2223 | D. 3829 | E. We don't want to answer |
|-------------------|-------------------|-------------------|-------------------|-----------------------------------|

4.19. Two round tables were placed for a childs birthday. Around every table there is an equal number of chairs. The chairs around the green table are numerated with even numbers (2, 4, 6, ...), and the chairs around the blue table are numerated with odd numbers (1, 3, 5, ...). If the chair with the number 4 is across the chair with the number 14, how many chairs are there around the tables?

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|-----------------|-----------------|-----------------|----------------------------------|-----------------------------------|
| A. 40 | B. 20 | C. 19 | D. Can't be determined | E. We don't want to answer |
|-----------------|-----------------|-----------------|----------------------------------|-----------------------------------|

4.20. Ace is 4 centimeters taller than Bobby, Cico is 8 centimeters taller Dudo, and Bobby is 2 centimeters shorter than Cico. How many centimeters is Dudo shorter than Ace?

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|--------------------|--------------------|-------------------|----------------------------------|-----------------------------------|
| A. 10 cm | B. 12 cm | C. 8 cm | D. Can't be determined | E. We don't want to answer |
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