

ROMÂNIA  
MINISTERUL APĂRĂRII NAȚIONALE  
DIRECȚIA GENERALĂ MANAGEMENT RESURSE UMANE

NECLASIFICAT  
Exemplar unic

Test de verificare a cunoștințelor la matematică  
Sesiunea 2023  
VARIANTA 1

1. Valoarea reală a lui  $x$  pentru care numerele  $x - 3, 10, x + 3$  sunt, în această ordine, în progresie aritmetică este:  
A. 5                      B. 7                      C. 10                      D. 13
2. Dacă  $x \in \left(\pi, \frac{3\pi}{2}\right)$  astfel încât  $\cos x = -\frac{1}{3}$ , atunci  $\operatorname{ctg} x$  este egal cu:  
A.  $-\frac{\sqrt{2}}{4}$                       B.  $\frac{\sqrt{2}}{4}$                       C.  $\frac{\sqrt{2}}{2}$                       D.  $2\sqrt{2}$
3. Se consideră mulțimea  $A = \{x \in \mathbb{Z}^* \mid 3x - 2 \leq 2\}$ . Atunci cardinalul mulțimii  $A$  este egal cu:  
A. 0                      B. 1                      C. 2                      D. 3
4. Se consideră funcția  $f: \mathbb{R} \rightarrow \mathbb{R}, f(x) = x^2 - mx + 1$ . Mulțimea valorilor reale ale lui  $m$  pentru care graficul funcției  $f$  este tangent axei  $Ox$  este:  
A.  $\{-2, 2\}$                       B.  $\{-2\}$                       C.  $\{2\}$                       D.  $\emptyset$
5. Se consideră ecuația  $9x^2 - 18mx - 8m + 16 = 0, m \in \mathbb{R}$  cu rădăcinile reale  $x_1, x_2$ . Dacă  $x_1 = 2x_2$ , atunci suma valorilor reale ale lui  $m$  este egală cu:  
A.  $-1$                       B. 0                      C. 1                      D. 3
6. Se consideră triunghiul  $ABC, M \in (BC)$ , astfel încât  $\overline{BM} = \frac{1}{3}\overline{MC}$ . Atunci descompunerea lui  $\overline{AM}$  în funcție de vectorii  $\overline{AB}$  și  $\overline{AC}$  este:  
A.  $\frac{2}{3}\overline{AB} + \frac{1}{3}\overline{AC}$                       B.  $\frac{5}{4}\overline{AB} + \frac{1}{4}\overline{AC}$                       C.  $\frac{1}{4}\overline{AB} + \frac{1}{4}\overline{AC}$                       D.  $\frac{3}{4}\overline{AB} + \frac{1}{4}\overline{AC}$
7. Numărul funcțiilor  $f: \mathbb{R} \rightarrow \mathbb{R}$  cu proprietatea că  $f(x) + f(1 - x) = x, \forall x \in \mathbb{R}$  este egal cu:  
A. 0                      B. 1                      C. 2                      D.  $\infty$
8. Fie funcția  $f: \mathbb{R} \rightarrow \mathbb{R}, f(x) = (m + 1)x^2 - (3m + 2)x + m - 2$ , unde  $m \in \mathbb{R} \setminus \{-1\}$ . Mulțimea valorilor lui  $m \in \mathbb{R} \setminus \{-1\}$  astfel încât  $f(x) < 0, \forall x \in \mathbb{R}$  este:  
A.  $(-2, -1)$                       B.  $\left(-\frac{6}{5}, -1\right)$                       C.  $\left(-2, -\frac{6}{5}\right)$                       D.  $\left(-1, -\frac{3}{5}\right)$
9. Se consideră triunghiul  $ABC$  neisoscel cu  $BC = a, AB = c, AC = b$ . Știind că  $(2a - b) \cos A = (2b - a) \cos B$  atunci măsura unghiului  $C$  este egală cu:  
A.  $120^\circ$                       B.  $45^\circ$                       C.  $30^\circ$                       D.  $60^\circ$



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Anexă la nr. \_\_\_\_\_ 2023  
Transferul în colegiile naționale militare – august 2023  
București

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Barem de evaluare și notare  
**VARIANTA 1**

Subiect	A	B	C	D
1			X	
2		X		
3		X		
4	X			
5	X			
6				X
7	X			
8			X	
9				X



**Test de verificare a cunoștințelor la limba engleză**  
**Sesiunea 2023**  
**VARIANTA 1**

**Choose the right answer: A, B, C or D.**

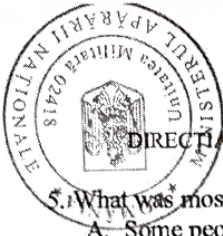
**Reading comprehension**

Athletes competed in the first Olympic Games in Greece almost three thousand years ago in 776 BC. Every four years, people from Greek city-states (and later the Roman Empire) travelled to a place called Olympia to watch the games, which continued for almost a millennium. They lasted from between one and five days, and only men were allowed to compete in the games. Many of the sports events were similar to those found in today's modern games where athletes run, jump and throw.

The modern Olympic Games began with the creation of the International Olympic Committee (the IOC) in 1894 and Greece was the first country to hold the games, in the city of Athens, in 1896. Fourteen countries with 241 athletes competed in forty-three events. Although some people wanted to have the games in Athens every four years, the IOC decided to have them in different countries and cities. In 1900, they were held in Paris and women were allowed to compete in the games for the first time. The first Winter Olympic Games were held in 1924 and athletes competed in events such as skating and ice hockey. Over 200 countries now compete in the Summer Olympic Games. The number of events has increased to 300 events and instead of five days of competition, the games now last for seventeen days.

There are some problems, however. There were no Olympic games held in 1916, 1940 and 1944 because of war. Also, some athletes use illegal substances to help them win. In addition, the games are very expensive. The 2014 Winter Games in Sochi, for example, cost \$US 50 billion. Nevertheless, the Olympic Games continue to be extremely popular all over the world.

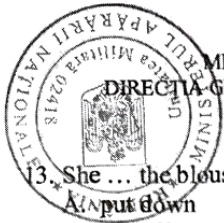
1. What is the main idea of the article?
  - A. The Olympics have never been popular.
  - B. There are many problems with the Olympics.
  - C. The Olympics began a long time ago and continue today.
  - D. The Olympics are irrelevant.
2. Where did the Olympic Games first begin?
  - A. Athens
  - B. Olympia
  - C. Rome
  - D. Sochi
3. After the first Olympic Games in 776 BC, how long did they continue in Greece?
  - A. about one thousand years
  - B. about two thousand years
  - C. about three thousand years
  - D. one hundred years
4. According to the article, what couldn't women do in the first Olympic Games?
  - A. watch the games
  - B. play hockey
  - C. travel to different countries and cities
  - D. compete in the Olympics



5. What was most special about the 1900 Olympics?
- A. Some people wanted the games to be in different places.
  - B. Women competed in the games.
  - C. They were held in Paris.
  - D. Country leaders attended.
6. What was the reason for not organizing Olympic Games in 1916, 1940 and 1944?
- A. natural disasters
  - B. financial difficulties
  - C. military conflict
  - D. no skating rinks

### Grammar and Vocabulary

7. She ... unwell for several days when she was taken to hospital.
- A. had been feeling
  - B. has been feeling
  - C. was feeling
  - D. had felt
8. If I ... the answers to the English test, I would pass it easily.
- A. known
  - B. would know
  - C. know
  - D. knew
9. 'Kate is late. This is not like her'. 'She ... about the meeting.'
- A. can have forgotten
  - B. should have forgotten
  - C. must have forgotten
  - D. would have forgotten
10. Their parents didn't know that only ... were allowed on the plane.
- A. two luggage
  - B. two luggages
  - C. two luggage's
  - D. two pieces of luggage
11. She promised she ... me with the housework when she ... hers.
- A. would help/ finished
  - B. would help/ would finish
  - C. will help/ will finish
  - D. would help/ finish
12. ... leather shoes cost too much.
- A. This
  - B. These
  - C. That
  - D. Which



13. She ... the blouse but it was obviously too small.  
A. put down  
B. put off  
C. tried on  
D. took up
14. Why don't you ... some photos?  
A. take  
B. make  
C. do  
D. put
15. Mother ... me not to leave my ID card at home.  
A. remembered  
B. reminded  
C. recalled  
D. reported
16. There have been a lot of complaints ... your behaviour.  
A. in  
B. on  
C. out of  
D. about
17. The testimony of the last ... clears the accused of all suspicion.  
A. witness  
B. onlooker  
C. viewer  
D. sightseer
18. His decision proves ... of character.  
A. strongness  
B. strongly  
C. stronger  
D. strength





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3	X			
4				X
5		X		
6			X	
7	X			
8				X
9			X	
10				X
11	X			
12		X		
13			X	
14	X			
15		X		
16				X
17	X			
18				X