

## CONCURSUL ȘCOLAR NAȚIONAL DE COMPETENȚĂ ȘI PERFORMANȚĂ COMPER

EDIȚIA 2016-2017 / ETAPA I – 27 ianuarie 2017

COMPER – MATEMATICĂ, CLASA a V-a

- Toate subiectele sunt obligatorii.
- Timpul efectiv de lucru este de 90 de minute.

Citește cu atenție enunțurile, apoi bifează în grilă răspunsurile corecte:

**STANDARD**

1. Dacă  $11 \cdot (a + b)$  este pătrat perfect, atunci cea mai mică valoare a numărului nenul  $\overline{ab}$  este:  
a. 11;                      b. 92;                      c. 29;                      d. 35.
2. Numărul  $3^{2223}$  nu este:  
a. natural;                      b. impar;                      c. compus;                      d. pătrat perfect.
3. Sfertul numărului  $2^{24}$  este:  
a.  $2^6$ ;                      b.  $2^8$ ;                      c.  $2^{23}$ ;                      d.  $2^{22}$ .
4. Rezultatul calculului  $7 + 11 + 15 + \dots + 999$  este:  
a. 125247;                      b. 125251;                      c. 225247;                      d. 225251.
5. Dacă  $a = 2^{302}$  și  $b = 3^{203}$ , atunci:  
a.  $a < b$ ;                      b.  $a > b$ ;                      c.  $a = b$ ;                      d.  $a + b = 5^{505}$ .
6. Dacă  $\overline{ab} + \overline{ab0} + \overline{ab00} = 4773$ , unde  $a$  și  $b$  sunt cifre în baza zece, atunci suma  $a + b$  are valoarea:  
a. 6;                      b. 7;                      c. 8;                      d. 9.
7. Dacă  $x + 2y + 3z = 130$  și  $x + 3y + 2z = 135$ , atunci  $5x + 13y + 12z$  are valoarea:  
a. 265;                      b. 765;                      c. 665;                      d. 850.
8. Dacă  $x^2 = 2017^2 - 2017 - 2016$ , atunci numărul natural  $x$  este:  
a. 2017;                      b. 2016;                      c. 2015;                      d. 2014.
9. Anton răspunde la toate cele zece probleme ale unui test și obține 29 de puncte. Dacă pentru un răspuns corect se obțin 5 puncte, iar pentru unul greșit se pierd 2 puncte, numărul răspunsurilor greșite este:  
a. par;                      b. pătrat perfect;                      c. impar;                      d. 2.



- 10.** Suma dintre un număr natural de două cifre nenule și răsturnatul său este 33. Acest număr are suma cifrelor:  
a. 3;                      b. 4;                      c. 5;                      d. 6.
- 11.** Suma numerelor naturale care împărțite la 4 dau câtul egal cu restul este:  
a. 25;                      b. 44;                      c. 30;                      d. 16.
- 12.** Se dă șirul: 1; 2; 5; 10; 17... . Al zecelea termen al șirului este:  
a. 50;                      b. 101;                      c. 65;                      d. 82.
- 13.** Restul împărțirii numărului  $a = 1 + 2 + 2^2 + 2^3 + \dots + 2^{98}$  la 7 este:  
a. 6;                      b. 4;                      c. 0;                      d. 2.
- 14.** Numărul numerelor naturale  $x$ , pentru care  $2^{60} < x \leq 2^{61}$  este:  
a. 1;                      b. 2;                      c.  $2^{60}$ ;                      d. 121.
- 15.** Fie  $n = \overline{abc} - \overline{cba}$  un număr natural. Cifra zecilor lui  $n$  este:  
a.  $b$ ;                      b. 0;                      c. 9;                      d. 5.
- 16.** Cel mai mic număr natural cu suma cifrelor 100 are:  
a. 5 cifre;                      b. 10 cifre;                      c. 12 cifre;                      d. 15 cifre.

**EXCELENȚĂ**

- 17.** Dacă  $\overline{ab6} = 2^{a+b+1}$ , atunci suma  $a + b$  are valoarea:  
a. 7;                      b. 8;                      c. 9;                      d. 10.
- 18.** Suma numerelor de forma  $\overline{abcd}$  ce satisfac relația  $\overline{abcd} + \overline{ab} \cdot \overline{cd} - 97\overline{ab} = 2010$  este:  
a. 2557;                      b. 4444;                      c. 9288;                      d. 8437.

**BAREM DE CORECTARE CONCURSUL COMPER-MATEMATICA  
ETAPA I, ANUL SCOLAR 2016-2017**

Item	a	b	c	d	Punctaj
1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5
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9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5
10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
11	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5
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16	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5
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18	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10

CLASA    I    II    III    IV    V    VI    VII    VIII

DISCIPLINA    LIMBA ROMANA     MATEMATICA

COD C.I.C. ELEV                      COD C.I.C. MENTOR  
                          

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**IMPORTANT !**

Unei intrebari ii corespunde un singur raspuns corect!

Bifeaza casuta corespunzatoare raspunsului corect, cu pix negru sau albastru inchis astfel:  sau  X

**Date elev**

Elev .....

Mentor .....

Punctajul obtinut: \_\_\_\_\_