

Mate 2000 Consolidare
Clasa a VII-a, semestrul II (2020-2021)
TESTE DE AUTOEVALUARE

– SOLUȚII –

Test de autoevaluare – p. 17

- I.** 1. -3 .
2. 39 .
3. $x \in \{-8; 13\}$.
4. -4 .
5. -6 .
6. -3 .
- II.** 1. B. 2. C. 3. B. 4. D.
- III.** 1. $x \in \{-27; -15; -9; 3\}$.
2. -2 .
3. -2 .
4. $x \in \{-8; 3\}$.

Test de autoevaluare – p. 35

- I.** 1. $(2; -2)$.
2. $(a; b) = (1; 3)$.
3. 12 .
4. $a = 5$.
5. 8 .
6. $(-3; 1)$.
- II.** 1. D. 2. C. 3. A. 4. C.
- III.** 1. $(5; -3)$.
2. $f = 80; b = 28$.
3. $a = 135; b = 105$.
4. $a = 18; b = 24; c = 36$.

Test de autoevaluare – p. 47

I. 1. 5.

2. $a \in \{-6; 6\}$.

3. $x_M = -1; y_M = 7$.

4. $a = -7; b = 16$.

5. $5\sqrt{5} + 15$.

6. $a \in \{1; 5\}$.

II. 1. D. 2. C. 3. A. 4. D.

III. 1. $AB = 2\sqrt{2}; BC = \sqrt{2}; AC = 3\sqrt{2}; AB + BC = AC \Rightarrow A, B, C$ coliniare.

2. b) $EF = 5; EG = 2\sqrt{5}; GH = 5$.

3. $a = 3; b = -7$.

4. $\mathcal{P} = 2\sqrt{37} + \sqrt{74}; \mathcal{A} = \frac{37}{2}$.

Test de autoevaluare – p. 67

I. 1. 28 cm.

2. 18 cm.

3. 36 cm.

4. 24 cm.

5. 60 cm.

6. 60 cm.

II. 1. D. 2. C. 3. D. 4. C.

III. 1. 864 cm^2 .

2. $BD = 32 \text{ cm}; CD = 72 \text{ cm}; BC = 104 \text{ cm}$.

3. $\mathcal{P} = 96 \text{ cm}; \mathcal{A} = 384 \text{ cm}^2$.

4. $\mathcal{A} = 1350 \text{ cm}^2; \mathcal{P} = 180 \text{ cm}$.

Test de autoevaluare – p. 79

I. 1. 35.

2. $6\sqrt{2}$.

3. 24.

4. 32.

5. 36.

6. $12\sqrt{2}$.

II. 1. C. 2. D. 3. B. 4. A.

- III.** 1. 24 cm, $\frac{144}{5}$ cm.
 2. a) $AA' = 45$ cm; b) $\mathcal{P} = 30 + 6\sqrt{73} + 12\sqrt{13}$ cm.
 3. a) 12 cm; b) $AC = 12\sqrt{10}$ cm; c) $d(B, AC) = \frac{26\sqrt{10}}{5}$ cm.

Test de autoevaluare – p. 81

- I.** 1. 40.
 2. $18(\sqrt{3} + 1)$.
 3. 50.
 4. 120.
 5. $12\sqrt{3}$.
 6. 36.

- II.** 1. D. 2. B. 3. B. 4. D.

- III.** 1. a) $AB = 60$ cm; $AC = 80$ cm; $BC = 100$ cm; b) $AD = 48$ cm.
 2. $AB = 9\sqrt{5}$ cm; $AC = 18\sqrt{5}$ cm; $BC = 45$ cm; $m(\sphericalangle BAC) = 90^\circ$, deoarece $AB^2 + AC^2 = BC^2$.
 3. a) 48 cm; 90 cm; 102 cm; b) $\frac{720}{17}$ cm.
 4. a) 12 cm; b) $AC = 12\sqrt{2}$ cm; $BD = 20$ cm.

Test de autoevaluare – p. 99

- I.** 1. 48 cm.
 2. 15 cm.
 3. 40 cm.
 4. 120° .
 5. $18\sqrt{3}$ cm.
 6. 18 cm.

- II.** 1. C. 2. D. 3. B. 4. D.

- III.** 1. $AC = BD = 8\sqrt{3}$; $R = 8$ cm.
 2. $\triangle FAH \equiv \triangle GCM \equiv \triangle EBN$ (L.U.L.) $\Rightarrow \mathcal{A}_{FAH} = \mathcal{A}_{GCM} = \mathcal{A}_{EBN} = 9\sqrt{3}$ cm²; $\mathcal{A}_{ABC} = 9\sqrt{3}$ cm²; $\mathcal{A}_{BCMN} = 36$ cm²; $\mathcal{A}_{EFGHMN} = 36(3 + \sqrt{3})$ cm².
 3. $\mathcal{A}_{EFGH} = 36$ cm².
 4. a) $\mathcal{A} = 108(4 + \sqrt{3})$ cm²; b) $OQ = 6(\sqrt{3} + 1)$ cm; c) $m(\sphericalangle OCN) = 75^\circ$.

Test de autoevaluare – p. 109

I. 1. 432 cm^2 .

2. $144\sqrt{3} \text{ cm}^2$.

3. 288 cm^2 .

4. 432 cm^2 .

5. 192 cm^2 .

6. $864\sqrt{3} \text{ cm}^2$.

II. 1. B. 2. D. 3. B. 4. D.

III. 1. $\mathcal{A}_{EFC} = 240 \text{ cm}^2$; $d(E, FC) = 8\sqrt{5} \text{ cm}$.

2. $\mathcal{A}_{ABCD} = 2700 \text{ cm}^2$.

3. $\mathcal{A}_{ABCD} = 504 \text{ cm}^2$.

4. a) $\mathcal{P} = 12(5 + \sqrt{3} + \sqrt{2}) \text{ cm}$; $AC = 12\sqrt{6} \text{ cm}$; $BD = 12\sqrt{11} \text{ cm}$;

b) $\mathcal{A}_{ABCD} = 360\sqrt{2} \text{ cm}^2$.