

**Mate 2000 Consolidare**  
**Clasa a VII-a, semestrul II (2021-2022)**  
**TESTE DE AUTOEVALUARE**

– SOLUȚII –

**Test de autoevaluare – p. 17**

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- 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**

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- 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

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**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

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**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.  $864 \text{ cm}^2$ .

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

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**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

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- 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

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- I.** 1. 48 cm.  
 2. 15 cm.  
 3. 40 cm.  
 4.  $120^\circ$ .  
 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.)  $\Rightarrow \mathcal{A}_{FAH} = \mathcal{A}_{GCM} = \mathcal{A}_{EBN} = 9\sqrt{3}$  cm<sup>2</sup>;  $\mathcal{A}_{ABC} = 9\sqrt{3}$  cm<sup>2</sup>;  $\mathcal{A}_{BCMN} = 36$  cm<sup>2</sup>;  $\mathcal{A}_{EFHGMN} = 36(3 + \sqrt{3})$  cm<sup>2</sup>.  
 3.  $\mathcal{A}_{EFGH} = 36$  cm<sup>2</sup>.  
 4. a)  $\mathcal{A} = 108(4 + \sqrt{3})$  cm<sup>2</sup>; b)  $OQ = 6(\sqrt{3} + 1)$  cm; c)  $m(\sphericalangle OCN) = 75^\circ$ .

## Test de autoevaluare – p. 109

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**I.** 1.  $432 \text{ cm}^2$ .

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

3.  $288 \text{ cm}^2$ .

4.  $432 \text{ cm}^2$ .

5.  $192 \text{ cm}^2$ .

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