

Mate 2000 Consolidare
Clasa a VII-a, semestrul al II-lea
TESTE DE AUTOEVALUARE

– SOLUȚII –

Test de autoevaluare – p. 21

- I.**
1. $7a$.
 2. $3x + 6y$.
 3. $-2(\sqrt{2} + \sqrt{3})x$.
 4. $-2\sqrt{3}a$.
 5. $-3a$.
 6. x .

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

- III.**
1. $x = -\frac{1}{\sqrt{3}}$.
 2. $n = 2 \in \mathbb{N}$.
 3. $n = 3^2$.
 4. $E = \frac{1}{3}(a+3)(b+3)(c+3)$.

Test de autoevaluare – p. 41

- I.**
1. $x(x-3)^2$.
 2. $(2^{4n} + 1)^2$.
 3. 4.
 4. $(2x^2 - 5x + 6)^2$.
 5. $(x-1)(x^3 + x^2 + 4)$.
 6. 24.

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

- III.**
1. $n = (a^2 + b^2)(b^2 + c^2)(c^2 + a^2)$.
 2. $(6a^2 - 2a + 7)^2$.
 3. $(x^2 + x\sqrt{3} + 1)(x^2 - x\sqrt{3} + 1)$.
 4. $x = 8$.

Test de autoevaluare – p. 65

- I.** 1. 3.
2. 4.
3. 8.
4. 2.
5. 2.
6. 3.

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

- III.** 1. -1 .
2. 3.
3. $5(3 - 2\sqrt{2})$.
4. a) $x \in \{-7; 6\}$; b) $x \in \{-8; 12\}$.

Test de autoevaluare – p. 75

- I.** 1. $x \in \{-5, -4, -3, -2, -1\}$.
2. $x \in \{-4, -3, -2, -1, 1, 2\}$.
3. $x \in \{4, 5, 6\}$.
4. $x \in \{-5, -4, -3, -2, -1, 1, 2\}$.
5. $x \in \{-5, -4, -3, -1\}$.
6. $x \in \{-4, -3, -2, -1, 0, 1, 2\}$.

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

- III.** 1. $x \in \{-5, -4, -3, -2, -1, 0\}$.
2. $x \in \{-3, -2, -1, 0\}$.
3. $x \in \{-6, -5, -4, -3, -2, -1, 0\}$.
4. $A = \{1, 2, 3, 4, 5, 6, 7\}$.

Test de autoevaluare – p. 91

- I.** 1. $AB = 5$.
2. $a = 6$.
3. $M(-1; 7)$.
4. $a = -7; b = 16$.
5. $15 + 5\sqrt{5}$.
6. $\frac{3}{7}$.

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

III. 1. $AB + BC = AC \Rightarrow A, B, C$ coliniare.

2. $\mathcal{A}_{\Delta ABC} = \frac{5}{2}(u^2)$.

3. $M(3; -7)$.

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

Test de autoevaluare – p. 103

I. 1. $BC = 40$ cm.

2. $18(3 + \sqrt{3})$ cm.

3. $BC = 50$ cm.

4. 120 cm.

5. $12\sqrt{3}$ cm.

6. 36 cm.

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. Deci $AB^2 + AC^2 = BC^2 \Rightarrow m(\sphericalangle BAC) = 90^\circ$.

3. a) $AB = 48$ cm; $AC = 90$ cm; $BC = 102$ cm;

b) $\frac{720}{17}$ cm.

4. a) $h = 12$ cm;

b) $12\sqrt{2}$ cm; 20 cm.

Test de autoevaluare – p. 127

I. 1. 432 cm².

2. $144\sqrt{3}$ cm².

3. 288 cm².

4. 432 cm².

5. 192 cm².

6. $864\sqrt{3}$ cm².

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

III. 1. $\mathcal{A}_{EFC} = 240$ cm²; $d(E, FC) = 8\sqrt{5}$ cm.

2. $\mathcal{A}_{ABCD} = 2700$ cm².

3. $\mathcal{A}_{ABCD} = 504$ cm².

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

b) $\mathcal{A}_{ABCD} = 360\sqrt{2}$ cm².

Test de autoevaluare – p. 141

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

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

- III.** 1. $\mathcal{P} = 20(5\sqrt{2} + 7)$ cm; $\mathcal{A} = 4900$ cm².
2. $\mathcal{P}_{OAPB} = 74 + 2\sqrt{231}$ cm; $\mathcal{A}_{OAPB} = 264 + 26\sqrt{231}$ cm².
3. a) $m(\sphericalangle M) = 85^\circ$; $m(\sphericalangle N) = 100^\circ$; $m(\sphericalangle P) = 95^\circ$; $m(\sphericalangle Q) = 80^\circ$;
b) $m(\sphericalangle PMQ) = m(\sphericalangle PNQ) = 65^\circ$; $m(\sphericalangle PMN) = m(\sphericalangle PQN) = 20^\circ$;
 $m(\sphericalangle NPM) = m(\sphericalangle MQN) = 60^\circ$; $m(\sphericalangle MNQ) = m(\sphericalangle QPM) = 35^\circ$.
4. $m(\widehat{BD}) = m(\widehat{CD}) = 30^\circ$; $m(\widehat{CE}) = m(\widehat{AE}) = 25^\circ$; $m(\widehat{BF}) = m(\widehat{AF}) = 35^\circ$.