



SIMULARE BAC 2026

TEHNOLOGIC

Subiectul I

① $\left(3 + \frac{3}{5}\right) : 4 + \frac{1}{10} = 1$

$$\frac{15+3}{5} \cdot \frac{1}{4} + \frac{1}{10} = \frac{9}{5} \cdot \frac{1}{4} + \frac{1}{10} = \frac{9}{10} + \frac{1}{10} = \frac{10}{10} = 1.$$

② $f: \mathbb{R} \rightarrow \mathbb{R}, f(x) = 3x + 6$
 $a = ?$, $a \in \mathbb{R}$ a.r. $f(1) + f(a) = 2f(0)$

$$\begin{aligned} f(1) &= 3 \cdot 1 + 6 = 9 \\ f(a) &= 3a + 6 \\ f(0) &= 6 \end{aligned}$$

$$\begin{aligned} \Rightarrow 9 + 3a + 6 &= 2 \cdot 6 \\ 3a + 15 &= 12 \Rightarrow 3a = -3 \\ \Rightarrow a &= -1 \end{aligned}$$

③ $\text{Rez. } \text{în } \mathbb{R}, \text{ ec. } \sqrt{4x - x^2} = \sqrt{3x}$

$$\text{C.E.: } \begin{cases} 4x - x^2 \geq 0 \\ 3x \geq 0 \end{cases}$$

$$\sqrt{4x - x^2} = \sqrt{3x} \quad |^2 \Rightarrow 4x - x^2 = 3x \Rightarrow x^2 - 4x + 3x = 0$$

$$\Rightarrow x^2 - x = 0 \Rightarrow x(x - 1) = 0 \Rightarrow x = 0 \text{ sau } x = 1$$

Verificare: $x = 0 \Rightarrow \sqrt{0} = \sqrt{0}$ (A)

$$(x=1) \Rightarrow \sqrt{4-1} = \sqrt{3} \quad (A)$$

$$S = \{0, 1\}$$

(4) $A = \{0, 1, 2, \dots, 26\}$
 $P = ?$ a.î alegând un element din A , acesta
 să fie pătratul unui nr. natural

$$P = \frac{\text{m.c.f.}}{\text{m.c.p.}}$$

$$\text{m.c.p.: } 27$$

$$\text{m.c.f.: } 0, 1, 4, 9, 16, 25$$

$$\Rightarrow P = \frac{6}{27}^{(3)} = \frac{2}{9}$$

(5) $A(0, 4), B(3, 0), C(4, 7)$
 Arătați că $\triangle ABC$ este dreptunghic isoscel

$$AB = \sqrt{(0-3)^2 + (4-0)^2} = \sqrt{9+16} = 5$$

$$AC = \sqrt{(0-4)^2 + (4-7)^2} = \sqrt{16+9} = 5$$

$$\Rightarrow AB = AC$$

$$\Downarrow$$

$$\triangle ABC \text{ isoscel}$$

(1)

$$\text{Verificăm dacă } m_{AB} \cdot m_{AC} = -1$$

$$m_{AB} = \frac{y_B - y_A}{x_B - x_A} = \frac{0-4}{3-0} = -\frac{4}{3}$$

$$m_{AC} = \frac{y_C - y_A}{x_C - x_A} = \frac{7-4}{4-0} = \frac{3}{4}$$

$$\Rightarrow m_{AB} \cdot m_{AC} = -\frac{4}{3} \cdot \frac{3}{4} = -1$$

$\Downarrow$

$$AB \perp AC \Rightarrow \angle BAC = 90^\circ$$

$$\text{Din (1) și (2)} \Rightarrow \triangle ABC \text{ dreptunghic isoscel.}$$

(2)

⑥

$$2 \sin 60^\circ + \sqrt{3} \sin 30^\circ - 3 \cos 30^\circ = 0$$

$$\left. \begin{array}{l} \sin 30^\circ = \frac{1}{2} \\ \sin 60^\circ = \frac{\sqrt{3}}{2} \\ \cos 30^\circ = \frac{\sqrt{3}}{2} \end{array} \right\} \Rightarrow \cancel{2} \cdot \frac{\sqrt{3}}{2} + \sqrt{3} \cdot \frac{1}{2} - 3 \cdot \frac{\sqrt{3}}{2} =$$

$$= \sqrt{3} + \frac{\sqrt{3}}{2} - \frac{3\sqrt{3}}{2} =$$

$$= \frac{2\sqrt{3} + \sqrt{3} - 3\sqrt{3}}{2} = \frac{0}{2} = 0$$