

FIȘĂ DE LUCRU

OPERAȚII CU NUMERE REALE

1. Efectuați:

- a) $9\sqrt{7} - 3 - [-3\sqrt{7} - (-11\sqrt{7} + 2)]$; b) $5 + 2\sqrt{11} - [3\sqrt{11} - 8 - (2\sqrt{11} + 4)] \cdot 2$;
 c) $4\sqrt{10} - [2\sqrt{10} - 3(5\sqrt{10} - 2\sqrt{10})]$; d) $\{4\sqrt{3} - 3 - [5\sqrt{3} + 1 - (7\sqrt{3} + 2)]\} - 6\sqrt{3} + 1$.

2. Efectuați:

- a) $3(\sqrt{5} - 4\sqrt{3}) - (2\sqrt{5} - 13\sqrt{3})$; b) $\sqrt{3}(2 + \sqrt{2}) - \sqrt{2}(2\sqrt{3} - 3\sqrt{2})$;
 c) $(3\sqrt{50} + 4\sqrt{8} - 7\sqrt{18}) : \sqrt{2}$; d) $(18\sqrt{12} + 12\sqrt{18}) : 6\sqrt{6} - 3(\sqrt{2} + 1)$;
 e) $(10\sqrt{3} + 25\sqrt{6}) : 5 - 2(\sqrt{3} + \sqrt{6})$; f) $(4\sqrt{2} - 6\sqrt{3}) : (2\sqrt{2} - 3\sqrt{3}) - \sqrt{3}(\sqrt{3} + 1)$.

3. Efectuați:

- a) $\sqrt{2} \cdot (\sqrt{3} - \sqrt{2}) - \sqrt{6} + 3$; b) $(\sqrt{27} + 2\sqrt{12} - 5\sqrt{75}) \cdot (\sqrt{3})^{-1}$;
 c) $5(\sqrt{7} + 2\sqrt{6}) - (2\sqrt{7} + 9\sqrt{6})$; d) $\sqrt{5} + 3\sqrt{2} - 2(\sqrt{5} + 2\sqrt{2}) - (-3\sqrt{2} - 3\sqrt{5})$;
 e) $(2\sqrt{12} + \sqrt{18}) : \sqrt{6} - 3\sqrt{5} : \sqrt{15}$; f) $\sqrt{3}(3\sqrt{2} - \sqrt{3}) - (1 + \sqrt{6}) \cdot 3$.

4. Calculați media geometrică a numerelor x și y în următoarele cazuri:

- a) $x = 2, y = 18$; b) $x = 12\sqrt{5}, y = \frac{3}{\sqrt{5}}$;
 c) $x = 1,8, y = 5$; d) $x = 0,7, y = 2,8$;
 e) $x = 2\sqrt{6} - 4, y = 2 + \sqrt{6}$; f) $x = (2 + \sqrt{2})(\sqrt{5} - \sqrt{3}), y = (\sqrt{5} + \sqrt{3})(2 - \sqrt{2})$.

5. Efectuați:

- a) $\sqrt{27} + \sqrt{12} - \sqrt{48}$; b) $4\sqrt{8} - 3\sqrt{50} + 2\sqrt{200}$; c) $\frac{\sqrt{32}}{8} + \frac{\sqrt{50}}{3} - \frac{13\sqrt{2}}{6}$;
 d) $\sqrt{3} \cdot \sqrt{21} + 2\sqrt{28} - 3\sqrt{175}$; e) $4\sqrt{10} \cdot \sqrt{2} - 7\sqrt{45} - \sqrt{125}$; f) $0,1\sqrt{6} - \frac{\sqrt{54}}{2} + 1,7\sqrt{6}$.

6. Efectuați:

- a) $2\left[3\sqrt{12}-2\left(\sqrt{27}-5\right)\right]-6\sqrt{(-1)^2}$;
b) $\sqrt{18}-\left\{2+3\left[3-11\sqrt{7}-\left(2-5\sqrt{2}-11\sqrt{7}\right)\right]\right\}:5$;
c) $3\cdot\left\{5\sqrt{6}-\sqrt{2}\cdot\left[\left(1+\sqrt{3}\right)\left(2+\sqrt{3}\right)-\left(5+\sqrt{2}\right)\right]\right\}-\sqrt{216}$;
d) $\left|(-1-\sqrt{2})^2-2-|2+\sqrt{2}|\right|\cdot\left[-2(1-\sqrt{2})^2(1+\sqrt{2})+\sqrt{18}-1\right]$.

7. Efectuați:

- a) $|1-\sqrt{3}|+3(1+\sqrt{2}-\sqrt{3})-2\sqrt{2}(1-\sqrt{2})+\sqrt{3}(2-2\sqrt{3})$;
b) $(1-\sqrt{5})\cdot 2+3(2\sqrt{5}-1)-\sqrt{5}(4-\sqrt{5})$;
c) $(4\sqrt{6}+6\sqrt{2}+8\sqrt{3}):2-2\sqrt{3}(2+\sqrt{2})-\sqrt{18}$;
d) $(2+\sqrt{3})(1-\sqrt{2})-\sqrt{6}(\sqrt{2}+1-\sqrt{3})+|\sqrt{3}+\sqrt{24}|$.