B. ECUAȚII DE GRADUL I.

I.Rezolvati ecuatiile:

1) $7x - 5 = 2x + 13$ **2)** $11 - 8x = 13 - 3x$ **3)** $7(x-18) = 3(x-14)$ **4)** $7(x-3) = 9(x+1)$

5) $3x - 2(20-x) = 5x - 8(12-x) + 20$ **6)** $-5(1-x) = -3(x-2) - x$ **7)** $-6 = 4(x+1) - 2(x+2)$

8) $(x+1)^2 - (x-1)\cdot(x+1) = x^2 - 4 - (x+3)\cdot(x-3)$ **9)** $5(x-1)^2 - 2(x+3)^2 = 3(x+2)^2 - 7(6x-1)$

10) $2(X+8)=5X+1$ **11)** $2(3X-12)=-3(2-X)$ **12)** $-5(1-X)=-3(X-2)-2$ **13)** $-6-2(X-4)=5X$

14) $3(X-2)-(-6+X)\cdot(-2)=-18$ **15)** $(x-1)^2+(x+3)(x-3) = (x-1)(x+2)+(x+3)^2$

16) $\overline{0,(x)} + \overline{0,0(x)} = 0,4(8)$ **17)** $(x+\sqrt{2})^2+(x-\sqrt{2})^2 = 2(x-1)(x-3)$ **18)** $\overline{1x5} + \overline{x51} - \overline{31x} = 64$

19) $\dfrac{x+1}{x} = \dfrac{0,1+0,(3)+0,0(3)}{0,1+0,1(3)}$ **20)** $5^{15-x} = 3125$ **21)** $8^{x-2} = 1024$ **22)** $\dfrac{\overline{x2x} + \overline{x4}}{\overline{xx1} + \overline{2x}+3} = 1$

23) $\dfrac{2x-5}{x-3} - \dfrac{x-2}{x-3} = 3$ **24)** $\dfrac{x^2 - 2\sqrt{6}}{10} = 0,5$ **25)** $|1-x| + (x-1)^2 + \sqrt{x-tg45^\circ} = 0$ **26)** $|x| = 2x+6$

27) $(7-\sqrt{x})(8-\sqrt{x}) = x+11$ **28)** $3(x-2) - (-6+x)\cdot(-2) = -18$

29) $\sqrt{x^2 + 9 - 6x} + |x^2 - x - 6| = 0$

30) $\dfrac{x}{3} + \dfrac{x-3}{9} = \dfrac{1}{6}$ **31)** $\dfrac{3x+1}{3} - \dfrac{5x-1}{12} = \dfrac{x+5}{4} - 2$ **32)** $\dfrac{2x+3}{5} + \dfrac{5x-4}{3} - 2 = 0$

33) $\dfrac{x+1}{2} - \dfrac{x+3}{12} = \dfrac{2(3-x)}{6}$ **34)** $\dfrac{13+x}{7} + \dfrac{3x-16}{3} = x + \dfrac{10}{3}$ **35)** $\dfrac{3x}{4} - \dfrac{5x}{12} = \dfrac{5x}{9} + 6 - \dfrac{2x}{9}$

36) $-3\cdot(x-4) + \dfrac{1}{2} = 0,5x - \dfrac{3x}{2}$ **37)** $\dfrac{25}{3} - x + \dfrac{x-3}{4} = \dfrac{x}{18} + \dfrac{2x-9}{27}$ **38)** $3 - \dfrac{7x+2}{5x} = \dfrac{1}{x}$

39) $(2\sqrt{x} - 3)\cdot(4 - 3\sqrt{x}) = 22 - 6x$ **40)** $(\sqrt{x} - 2)^2 = (\sqrt{x} - 2)\cdot(\sqrt{x} + 2)$

41) $\sqrt{(2x - 1)^2} + \sqrt{x - \sin 30^\circ} + \sqrt{(x - 0,5)^2} = 0$ **42)** $|(2x - 3)(x-2)| + |4 - 2x| + |x^2 - 4| = 0$

43) $\sqrt{x - \cos 60^\circ} + |0,5 - x| + (2x - 1)^2 = 0$

44) $0,5\cdot x - 1,8(3) = 0,25 \cdot \dfrac{x - 5}{3}$ **45)** $0,25\cdot x + 0,8(3) = 1,(5)\cdot \dfrac{x - 1}{7}$

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II.

1) Care dintre numerele 1 ; $-\sqrt{3}$; $\frac{1}{\sqrt{2}}$ este solutie a ec : $(x - 1)\cdot\sqrt{2} = (\sqrt{3} - 1)\cdot x + 1 - \sqrt{3}$; .....

2) Care dintre numerele: 1 ; $-\sqrt{3}$; $(\sqrt{2})^{-1}$ este solutie a ec : $5\cdot(x + \sqrt{3}) + \frac{1}{2} = 0,5$; .....

3) Dintre numerele : $a= [\sqrt{3} - 2^2 + (-2)^{120}:(-2)^{118} + 2^{-1} - 3\cdot(\sqrt{3})^{-1}]^{-1} - 4^4:2^7$ si

$$b= [-4\frac{1}{2} - 4,5:(-4\frac{1}{2}) - (-\frac{1}{4})]:\frac{4}{5}\cdot 0,5(3)$$

solutie a ecuatiei: $\frac{|x + 1| + 2}{3} = 1$ este numarul .....

4) Ecuatia $mx + 2 = 2x + m$ are solutie unica pentru m= .....

5) Ecuatia $a^2x - 4 = x - 4a$ are o singura solutie daca a= .....

6) Ecuatia $m^2x - 2mx = (m - 3)(m - 1) - 2x + mx$, $m\in R$, are o singura solutie reala daca m = ...

7) Ecuatia $m^2\cdot x + \sqrt{2} = 2\cdot x + m$, $m\in R$, are cel putin 2 solutii daca m are valoarea .....

8) Ecuatia $m^2\cdot x - 2 = x - 2m$, $m\in R$, nu are solutii reale daca m are valoarea .....

9) Valoarea parametrului **a** pentru care ec: $2x + 1 = ax + 7$ nu are solutii este **a=** .....

10) Ecuatia $\frac{x}{m} - \frac{1}{2} = x + 1$ nu are solutii reale daca m= .....

11) Ecuatiile $2x - 3a = 1 + 3x$ si $6x + 2 - a = 4x + 5a$ sunt echivalente pentru a = ...

12) Ecuatiile $mx + 2 = x + m$ si $2x + 1 = 3x - 2$ sunt echivalente pentru m= .....

13) Daca ecuatia $2m^2x + 4x = 6mx - 1$ are solutia 2 atunci m= .....

14) Ecuatia $2x + 3 = ax + a$ are solutii numere intregi pentru a = ...

15) Radacina patrata a solutiei ecuatiei $-\frac{1}{2}\cdot x + \frac{4}{-3} = -2$ este egala cu .....

16) Cubul solutiei ecuatiei $(x + 2)\cdot(x - 2) - (x - 3)^2 = -1$ este .....

17) Solutia ecuatiei $|x| + 2 = 5$ in Z - N este .....

18) Solutia ecuatiei $|3x + 1| = 5$ in R - Z este .....

19) Solutia ecuatiei $|x + \sqrt{3}| = \sqrt{3}$ in R - Q este .....

20) Fie ecuatia $\frac{m}{x + 1} = \frac{1}{x - 1}$,**a)**valoarea lui **m** pentru care ecuatia in **x** are solutia 2 este..

b)valoarea lui **x** pentru care ecuatia in **m** are solutia 2 este ..

21) Rezolvati in **N** ecuatia (x-3)(y-5) = 15

22) Rezolvati in **Z** ecuatia (2x-1)(y+2) = 6

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