Rozdział 2 - NIERÓWNOŚCI KWADRATOWE

Lp.	Nierówność	Postać uproszczona	WYNIK
1	$x^2 - x > \frac{x}{2} + 1$	$2x^2-3x-2>0$	$Z=\left(-\infty,-\frac{1}{2}\right)\cup\left(2,+\infty\right)$
2	$(2x+3)^2<1$	$x^2+3x+2<0$	$Z=(-2,-1)$
3	$(\frac{1}{2}x+1)^2>16$	$x^2+4x-60>0$	$Z=(-\infty,-10)\cup(6,+\infty)$
4	$(3x-1)^2-4(2-x)^2>0$	$x^2+2x-3>0$	$Z=(-\infty,-3)\cup(1,+\infty)$
5	$(1-3x)^2+3x-4x^2\geq 9$	$5x^2-3x-8\geq 0$	$Z=(-\infty,-1\rangle\cup\langle\frac{8}{5},+\infty)$
6	$(3x-2)^2-x^2-2x\leq 1$	$8x^2-14x+3\leq 0$	$Z=\langle\frac{1}{4},\frac{3}{2}\rangle$
7	$2x^2+9>(x-4)^2+14x$	$x^2-6x-7>0$	$Z=\left(-\infty,-1\right)\cup\left(7,+\infty\right)$
8	$\sqrt{3}x^2 - 4x + \sqrt{3} < 0$		$Z=\left(\frac{\sqrt{3}}{3},\sqrt{3}\right)$
9	$(x-1)^2-4>0$	$(x-3)(x+1)>0$	$Z=\left(-\infty,-1\right)\cup\left(3,+\infty\right)$
10	$(2x+3)^2-1<0$	$(x+1)(x+2)<0$	$Z=(-2,-1)$
11	$5(x+1)<x(3-x)$	$x^2+2x+5<0$	$Z=\emptyset$
12	$x^2-x\geq \frac{x}{2}+1$	$2x^2-3x-2\geq 0$	$Z=\left(-\infty,-\frac{1}{2}\right\rangle\cup\langle 2,+\infty\right)$
13	$x(x-2)>3(x-2)$	$x^2-5x+6>0$	$Z=\left(-\infty,2\right)\cup\left(3,+\infty\right)$
14	$(3x+2)^2\leq 7(3x+2)$	$9x^2-9x-10\leq 0$	$Z=\langle-\frac{2}{3},\frac{5}{3}\rangle$
15	$(x-4)^2+(x-4)(x+2)>0$	$x^2-5x+4>0$	$Z=\left(-\infty,1\right)\cup\left(4,+\infty\right)$
16	$(x-3)^2>(x-3)(2x+9)$	$-x^2-9x+36>0$	$Z=(-12,3)$
17	$-\frac{1}{2}(x+1)(x-3)\leq 0$	$x_1=-1;\quad x_2=3$	$Z=\left(-\infty,-1\right\rangle\cup\langle 3,+\infty\right)$
18	$-5(x-2)(1-x)\leq 0$	$x_1=2;\quad x_2=1$	$Z=\langle 1,2\rangle$
19	$x^2-7\lvert x\rvert+10\leq 0$		$Z=\langle-5,-2\rangle\cup\langle 2,5\rangle$
20	$x^2-3\lvert x\rvert-4\leq 0$		$Z=\langle-4,4\rangle$
21	$x^2-2x-5\lvert x-1\rvert+7\leq 0$		$Z=\langle-2,-1\rangle\cup\langle 3,4\rangle$
22	$x^2-4x+\lvert x-1\rvert+3\leq 0$		$Z=\langle 1,2\rangle$
23	$\lvert x^2+3x+1\rvert\leq 1$		$Z=\langle-3,-2\rangle\cup\langle-1,0\rangle$
24	$\lvert x^2+6x-1\rvert\leq 6$		$Z=\langle-7,-5\rangle\cup\langle-1,1\rangle$
25	$-2x^2+(x-1)^2\leq -2$	$-x^2-2x+3\leq 0$	$Z=\left(-\infty,-3\right\rangle\cup\langle 1,+\infty\right)$

Lp.	Nierówność	Postać uproszczona	WYNIK
26	$-x^2-\|x\|+2>0$		Z=(-1,1)
27	$x^2-3\|x\|+2\geq 0$		$Z=(-\infty,-2\rangle\cup\langle -1,1\rangle\cup\langle 2,+\infty)$
28	$x^2-\|x\|\leq 0$		$Z=\langle -1,1\rangle$
29	$x^2-\|5x+6\|>0$		$Z=(-\infty,-3)\cup(-2,-1)\cup(6,+\infty)$
30	$\|x^2-3\|<1$		$Z=(-2,-\sqrt{2})\cup(\sqrt{2},2)$
31	$\frac{5x^2+9}{6}-\frac{4x^2-9}{5}>3$	$x^2+9>0$	Z=R
32	$x-8<3x<15+x-x^2$		Z=(-4,3)
33	$2<x^2-x<x^2+2x$		$Z=(2,+\infty)$
34	$x^2-11<5x+3<7+9x$		Z=(-1,7)
35	$x^2+2x-8\leq 3x-8$	$x(x-1)\leq 0$	$Z=\langle 0,1\rangle$
36	$-x^2+6x-6\leq 3x-3$	$-x^2+3x-3\leq 0$; $\Delta=-3$	Z=R
37	$2x^2+19>8x+8$	$2x^2-8x+11>0$; $\Delta=-24$	Z=R
38	$4x-8\geq -x^2+5x-2$	$x^2-x-6\geq 0$	$Z=(-\infty,-2\rangle\cup\langle 3,+\infty)$
39	$x^2+6x+9\leq 0$	$(x+3)^2\leq 0$	Z={-3}