

Irrational inequalities

№1. Solve the following inequalities by method of a careful look:

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| 1. $\sqrt{x^2} < -4$; | 5. $\sqrt{3-x} + \sqrt{x-5} \geq -10$; |
| 2. $\sqrt{x^2 + 2x + 1} > -2$; | 6. $\sqrt{x^2 - x + 1} + \frac{1}{\sqrt{x^2 - x + 1}} < 2$; |
| 3. $\sqrt{x+2} > \sqrt{x-2}$; | |
| 4. $\sqrt{x+2} + \sqrt{x+11} < 2$; | 7. $\sqrt{x^2 + 2x + 2} + \sqrt{x^2 - 4x + 5} < \frac{3}{2}$. |

№2. Solve the following inequalities:

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| 1. $\sqrt{6x - x^2} < 3 + x$; | 6. $\sqrt{2x - x^2} < 6 - x$; |
| 2. $\sqrt{2x - 1} < x - 2$; | 7. $\sqrt{x^2 - 12} \leq x - 3$; |
| 3. $\sqrt{2 - x} > x$; | 8. $\sqrt{x^2 - 20} \leq x - 5$; |
| 4. $x + 3 < \sqrt{x + 33}$; | 9. $x + 4 > 2\sqrt{4 - x^2}$; |
| 5. $x - 1 < \sqrt{x^2 + 1}$; | 10. $1 + \sqrt{x + 3} < 3\sqrt{x}$. |

№3. Solve the following inequalities:

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| 1. $\sqrt{x^2 - 25} \leq 5 - x$; | 2. $\sqrt{\frac{-3}{x^2 + 2x + 10}} \geq 0$. |
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№4. Solve the following inequalities:

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| 1. $x + 5 - \sqrt{25 + 10x + x^2} \leq 2x$; | 2. $x - \sqrt{1 - x } < 0$. |
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