

Irrational equations

№1. Solve the following equations:

1. $2\sqrt{x+5} = x+2;$

4. $2\sqrt{x+2} + \sqrt{2-4x} = \sqrt{10};$

2. $5 + 2\sqrt{x-2} = x;$

5. $\sqrt{12-x} - \sqrt{4-x} = 2;$

3. $2\sqrt{x-1} + \sqrt{4x-1} = \sqrt{3};$

6. $5 + \sqrt{16x^2 - 37x - 2} = 4x.$

№2. Solve the following equations:

1. $\sqrt{9x^2 + 4\sqrt{6x+2}} - 2 = 3x;$

2. $\sqrt{x^2 + \sqrt{4x+5}} = x+1.$

№3. Solve the following equations:

1. $x - 2\sqrt{x-6} = 6;$

2. $\sqrt{15 - 3\sqrt{x}} = \sqrt{7 + \sqrt{x}}.$

№4. Solve the following equations:

1. $\sqrt{(x+6)^2} = x+6;$

2. $2 + \sqrt{x^2 - 4x + 4} = x.$

№5. Solve an equation by method of a careful look:

$$\sqrt{x+5} + \sqrt{2-x} = 0.$$

№6. Solve an equation:

$$\sqrt{x^2 + 5x + 4} + \sqrt{2x^2 + 24x - x^3} = 0.$$