

Equations with an absolute value II

Change of variables

№13. Solve equations:

1. $x^2 - 4|x| - 1 = 0,$

2. (*Ukraine 2007*) $x^3 - 4|x| = 0,$

3. $\left(\frac{4|x-1|+1}{2}\right)^2 = 11(x-1)^2 + \frac{5}{4}.$

Testing intervals

№14. Solve equations:

1. $-\frac{|x|}{x} - x = \frac{x^2}{2} + 1,$

2. $x^2 - 6x + 8 + |x - 4| = 0.$

Equivalent transformations

№15. Solve equations:

1. $|x^2 - 2x - 1| - x + 1 = 0,$

2. $|x^2 - 3x| = 2x - 4.$