

Nepilnais kvadrātvienādojums $ax^2 + bx = 0$

Lai atrisinātu nepilno kvadrātvienādojumu, kurā iztrūkst saskaitāmais c , vienādojuma kreiso pusi sadala reizinātājos (iznes nezināmo x pirms iekavām).

Paraugi

a) $x^2 + 15x = 0$

$$x(x + 15) = 0$$

$$\underline{x=0} \quad \text{vai} \quad x + 15 = 0$$

$$\underline{\underline{x = -15}}$$

Atbilde. 0; -15

c) $60x - 6x^2 = 0$

$$6x(10 - x) = 0$$

$$6x = 0 \quad \text{vai} \quad 10 - x = 0$$

$$\underline{x=0} \quad \quad \quad -x = -10$$

$$\underline{\underline{x = 10}}$$

Atbilde. 0; 10

b) $-3y^2 + y = 0$

$$y(-3y + 1) = 0$$

$$\underline{y=0} \quad \text{vai} \quad -3y + 1 = 0$$

$$-3y = -1 \quad | :(-3)$$

$$\underline{\underline{y = \frac{1}{3}}}$$

Atbilde. 0; $\frac{1}{3}$

d) $-18y + 15y^2 = 0$

$$-3y(6 + 5y) = 0$$

$$-3y = 0 \quad \text{vai} \quad 6 + 5y = 0$$

$$\underline{y=0}$$

$$5y = -6$$

$$y = \frac{-6}{5}$$

$$\underline{\underline{y = -1\frac{1}{5}}}$$

Atbilde. 0; -1,2

Piemēri risināšanai

1) $x^2 - 6x = 0$

8) $6x^2 - 6x = 0$

2) $x^2 - 3x = 0$

9) $8y + 4y^2 = 0$

3) $8x - x^2 = 0$

10) $\frac{5}{6}y^2 - \frac{5}{6}y = 0$

4) $x^2 + 4x = 0$

11) $5x^2 - 15x = 0$

5) $-y^2 + 5y = 0$

12) $6x^2 + 4x = 0$

6) $7y + y^2 = 0$

13) $9y^2 - 12y = 0$

7) $y^2 + 0,1y = 0$

14) $20y + 2y^2 = 0$

1) $3x^2 - 4x = 0;$

3) $6z - z^2 = 0;$

5) $-5m^2 + 6m = 0;$

2) $10x^2 + 7x = 0;$

4) $2y + y^2 = 0;$

6) $-4a^2 - 3a = 0;$

1) $25a^2 - 16 = 0;$

3) $1,44 - 2,25m^2 = 0;$

2) $100 - 64b^2 = 0;$

4) $2,56 - 1,44z^2 = 0;$

Nepilnais kvadrātvienādojums $ax^2 + c = 0$

Lai atrisinātu nepilno kvadrātvienādojumu, kurā iztrūkst koeficients b , saskaitāmo c pārnes uz vienādojuma labo pusi; c dala ar koeficientu a un izvelk kvadrātsakni no dalījuma. Jāatceras, ka iegūst divas saknes: vienu pozitīvu, otru negatīvu.

a) $y^2 - 2,89 = 0$

$$y^2 = 2,89$$

$$y = \pm\sqrt{2,89}$$

$$\underline{y_1 = 1,7; x_2 = -1,7}$$

Atbilde. 1,7; -1,7

Paraugi

b) $y^2 - 3 = 0$

$$y^2 = 3$$

$$y = \pm\sqrt{3}$$

$$\underline{y_1 = \sqrt{3}; y_2 = -\sqrt{3}}$$

Atbilde. $\sqrt{3}; -\sqrt{3}$

$25x^2 - 16 = 0$

$$25x^2 = 16 \quad | :25$$

$$x = \pm\sqrt{\frac{16}{25}}$$

$$\underline{x_1 = \frac{4}{5}; x_2 = -\frac{4}{5}}$$

Atbilde. $\frac{4}{5}; -\frac{4}{5}$

d) $a^2 + 25 = 0$

$$a^2 = -25$$

Atbilde. Vienādojumam nav sakņu jeb \emptyset

Piemēri risināšanai

5) $x^2 - 400 = 0;$

7) $x^2 - 1,44 = 0;$

9) $x^2 + 9 = 0;$

11) $x^2 - 48 = 0;$

13) $x^2 - 11 = 0;$

6) $x^2 - 900 = 0;$

8) $x^2 - 2,25 = 0;$

10) $x^2 + 36 = 0;$

12) $x^2 - 72 = 0;$

14) $x^2 - 13 = 0.$

7) $6v^2 + 24 = 0;$

10) $12m^2 - 4 = 0;$

8) $7u^2 + 28 = 0;$

11) $11x^2 + 19 = 19;$

9) $5m^2 - 1 = 0;$

12) $15 + 8x^2 = 15;$

2) $a^2 - 9 = 0$

3) $169 - x^2 = 0$

4) $-y^2 + 196 = 0$

5) $25y^2 - 100 = 0$

6) $0,1y^2 - 14,4 = 0$

7) $y^2 + 9 = 0$

8) $4x^2 + 4 = 0$