Εξισώσεις - Ανισώσεις

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1. $|3x-6|=0$

$3x-6=0$

$3x=6$

$\boxed{x=2}$

2. $|x+4|<0$

Αδύνατη

3. $|2x-7|\leq 5$

$-5\leq 2x-7\leq 5$

$7-5\leq 2x\leq 5+7$

$2\leq 2x\leq 12$

$\boxed{1\leq x\leq 6}$

4. $|3-x|>2$

$3-x>2$ ve $3-x<-2$

$-x>2-3$ $\quad -x<-2-3$

$-x>-1$ $\quad -x<-5$

$x<1$ $\quad x>5$

$x \in (-\infty, 1) \cup (5, +\infty)$

5. $|5x+10| \geq 0 \quad x \in \mathbb{R}$

6. $|2x-5| = |x+1|$

$2x-5 = x+1$ ve $2x-5 = -x-1$

$x = 6$ $\quad 3x = 4$

$x = \frac{4}{3}$

7. $|x-9| \leq 0$

$|x-9| = 0$

$x-9 = 0$

$\boxed{x=9}$

8. $\left|\frac{3x-1}{2}\right| < 4$

$-4 < \frac{3x-1}{2} < 4$

$-8 < 3x-1 < 8$

$-7 < 3x < 9$

$\boxed{-\frac{7}{3} < x < 3}$

9. $|4x+7| > -2$ $x \in \mathbb{R}$

10. $|7-2x| < 0$ Αδύνατη

11. $|x+8| \geq 3$

$x+8 \geq 3$ ή $x+8 \leq -3$

$x \geq -5$ $x \leq -11$

12. $|3x-5| > 0$

$\longrightarrow 3x-5 = 0$

$x = \frac{5}{3}$

$x \neq \frac{5}{3}$

13. $|4x-9| \leq -1$ Αδύνατη

14. $|2x+6| = -3$ Αδύνατη

15. $|x-6| \geq 4$

$x-6 \geq 4$ ili $x-6 \leq -4$

$x \geq 10$ $x \leq 2$

16. $|5x-3| \geq 0$ $x \in R$

17. $|x+1| \geq -5$ $x \in R$

18. $|3x+2| = |2x-9|$

$3x+2 = 2x-9$ ili $3x+2 = -2x+9$

$x = -11$ $5x = 7$

$x = \frac{7}{5}$

19. $|2x+5| > 7$

$2x+5 > 7$ ili $2x+5 < -7$

$2x > 2$ $2x < -12$

$x > 1$ $x < -6.$

20. $\left|\frac{x-5}{3}\right| \leq 2$

$$-2 \leq \frac{x-5}{3} \leq 2$$

$$-6 \leq x-5 \leq 6$$

$$-1 \leq x \leq 11$$

21. $|2x-8| = 0$

$$2x-8=0$$

$$2x=8$$

$$x=4$$

22. $|x-11| < -3$ Абсолютная.

23. $|6-3x| = 9$

$6-3x=9$ или $6-3x=-9$

$-3x=3$ $\quad x=-1$ $\quad -3x=-15$ $\quad x=5$

24. $|2x-1| \geq -3 \quad x \in \mathbb{R}$

25. $|x+10| \leq 0$

$x+10=0$

$\boxed{x=-10}$

26. $|4x-12| \leq 8$

$-8 \leq 4x-12 \leq 8$

$4 \leq 4x \leq 20$

$1 \leq x \leq 5$

27. $|2x+9| > 0$

$\rightarrow 2x+9=0 \qquad x \neq -\frac{9}{2}$

$x=-\frac{9}{2}$

28. $\left|\frac{2x+3}{5}\right| \geq 1$

$\frac{2x+3}{5} \geq 1$

$2x+3 \geq 5$

$2x \geq 2$

$x \geq 1$

ili

$\frac{2x+3}{5} \leq -1$

$2x+3 \leq -5$

$2x \leq -8$

$x \leq -4$

29. $|x-7| = |3x+1|$

$x-7 = 3x+1$

$-8 = 2x$

$x = -4$

ili

$x-7 = -3x-1$

$4x = 6$

$x = \frac{3}{2}$

30. $\left|\frac{x+3}{2}\right| > -2$

Apsolutna vrijednost je uvijek pozitivna ili 0, pa je rješenje $x \in \mathbb{R}$.

Пробохи

$d(\alpha, \beta) = |\alpha - \beta|$

$\lvert x-3\rvert \le 2$	$d(x,3) \le 2$	$[1,5]$
$\lvert x+1\rvert > 3$	$d(x,-1) > 3$	$(-\infty,-4) \cup (2,+\infty)$
$\lvert x-2\rvert < 4$	$d(x,2) < 4$	$(-2,6)$
$\lvert x-6\rvert < 2$	$d(x,6) < 2$	$(4,8)$
$\lvert x-1\rvert > 3$	$d(x,1) > 3$	$(-\infty,-2) \cup (4,+\infty)$

48. $d(x,2) < 3$

(a) Νδο $-1 < x < 5$

$$|x-2| < 3$$

$$-3 < x-2 < 3$$

$$\boxed{-1 < x < 5}$$

(β) i) $A = \dfrac{\overset{(+)}{|x+1|} + \overset{(-)}{|x-5|}}{3} = \dfrac{x+1-x+5}{3}$ (2)

• $-1 < x < 5 \Rightarrow 0 < x+1 < 6$

• $-1 < x < 5 \Rightarrow -6 < x-5 < 0$

ii). $B = \left|\dfrac{x+2}{x-6}\right| = \dfrac{\overset{(+)}{|x+2|}}{\overset{(-)}{|x-6|}} = \dfrac{x+2}{-x+6}$

• $-1 < x < 5 \Rightarrow 1 < x+2 < 7$

• $-1 < x < 5 \Rightarrow -7 < x-6 < -1$

iii) $P = |x^2 - 4x - 5|$

$P = |(x-5)(x+1)|$

$P = |\overset{(-)}{x-5}|\,|\overset{(+)}{x+1}|$

- $-1 < x < 5 \Rightarrow -6 < x-5 < 0$

- $-1 < x < 5 \Rightarrow 0 < x+1 < 6$

$P = (-x+5)(x+1)$.

Επόμενο μάθημα

Ημερομηνία μαθήματος : 29/10/26

Ώρα μαθήματος : 19:00.

Ασκήσεις

Σύνολο 8

25 47

26 49

27 50

29 44

30 46.

παρατηρήσεις