

Absolutní hodnota

vzdálenost od nuly

> 0

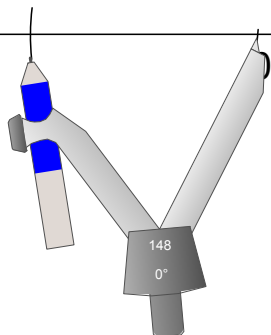
$|b|$

$|a|$

b

$-b$

a



$$|a| = |-a|$$

$$|a| = |-b|$$

$$|a| = |+b|$$

1 22-10:01

$|x|$

:

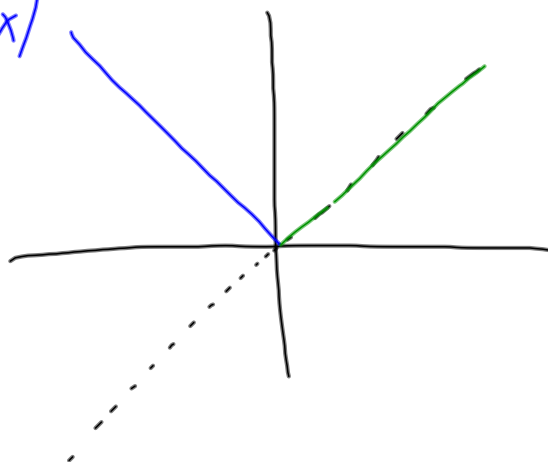
$(-\infty; 0)$

$< 0; \infty)$

$$|x| = -x$$

$$|x| = x$$

$|x|$

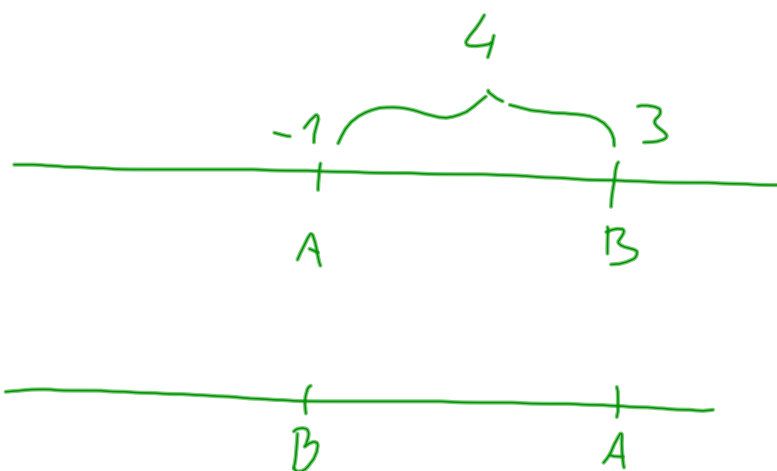


1 22-10:09

$$\sqrt{x^2} = |x|$$

1 22-10:13

$$|A - B| = |B - A|$$



1 22-10:14

$$|a| = |-a|$$

$$|a \cdot b| = |a| \cdot |b|$$

$$\left| \frac{a}{b} \right| = \frac{|a|}{|b|} \quad b \neq 0$$

1 22-10:17

$$|x+2| = 1$$

pro

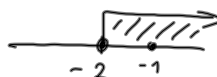
$$x+2 \geq 0$$

$$x \geq -2 :$$

$$x+2=1$$

$$\underline{x = -1}$$

$$K_1 = \{-1\}$$



pro

$$x+2 < 0$$

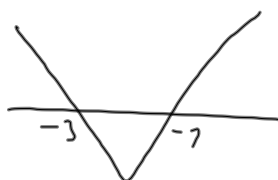
$$x < -2 : -(x+2) = 1$$

$$\underline{x = -3}$$

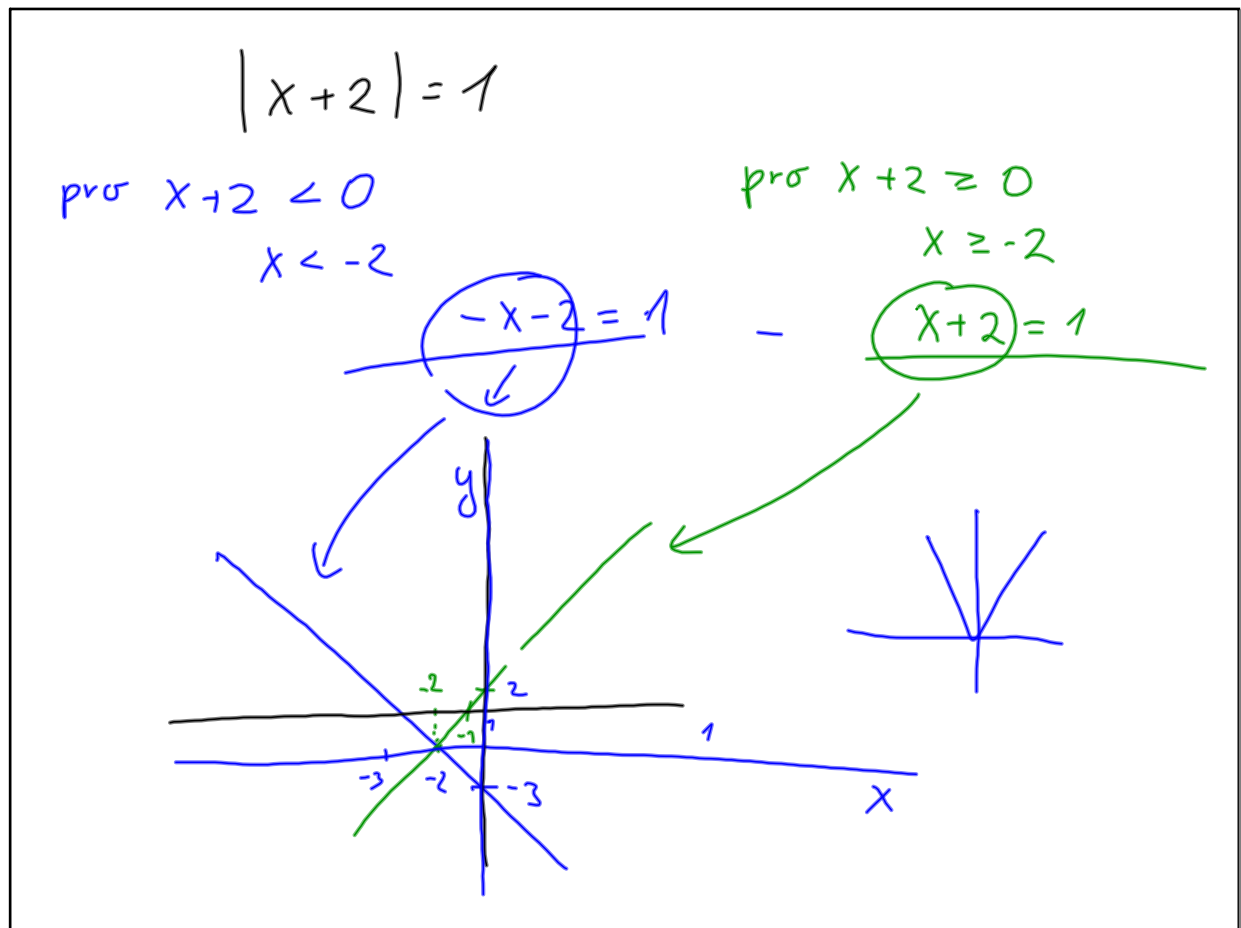
$$K_2 = \{-3\}$$



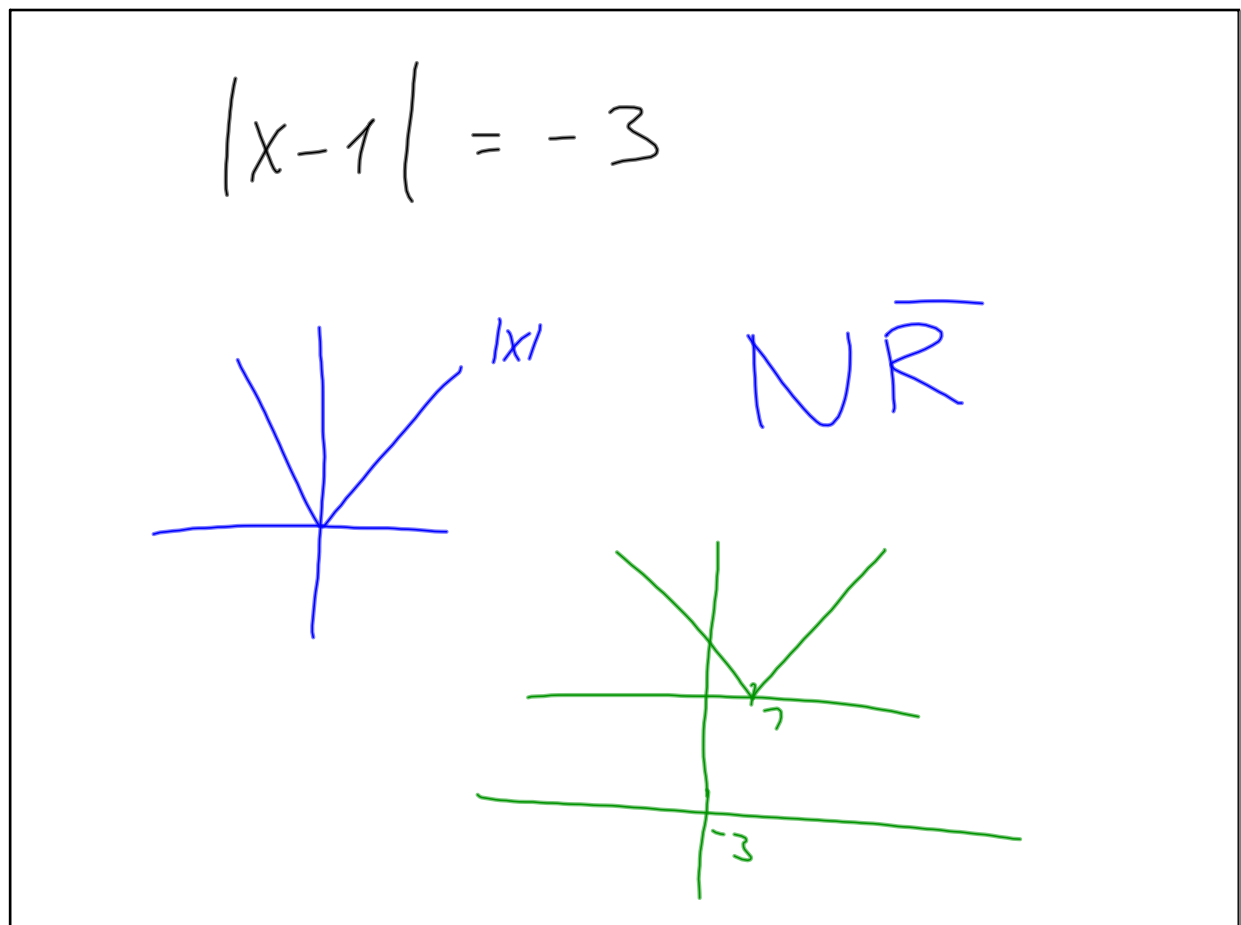
$$K = \{-3; -1\}$$



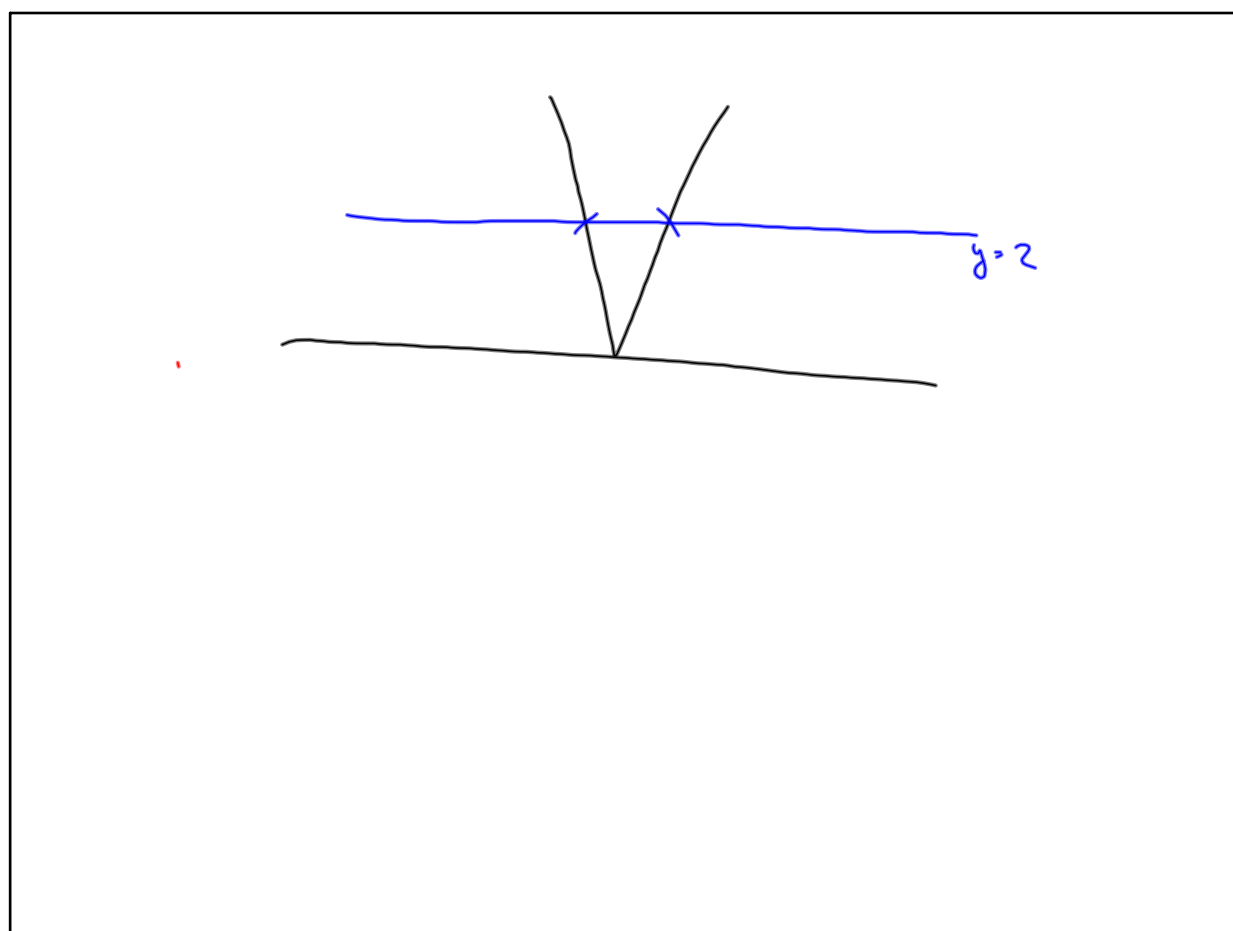
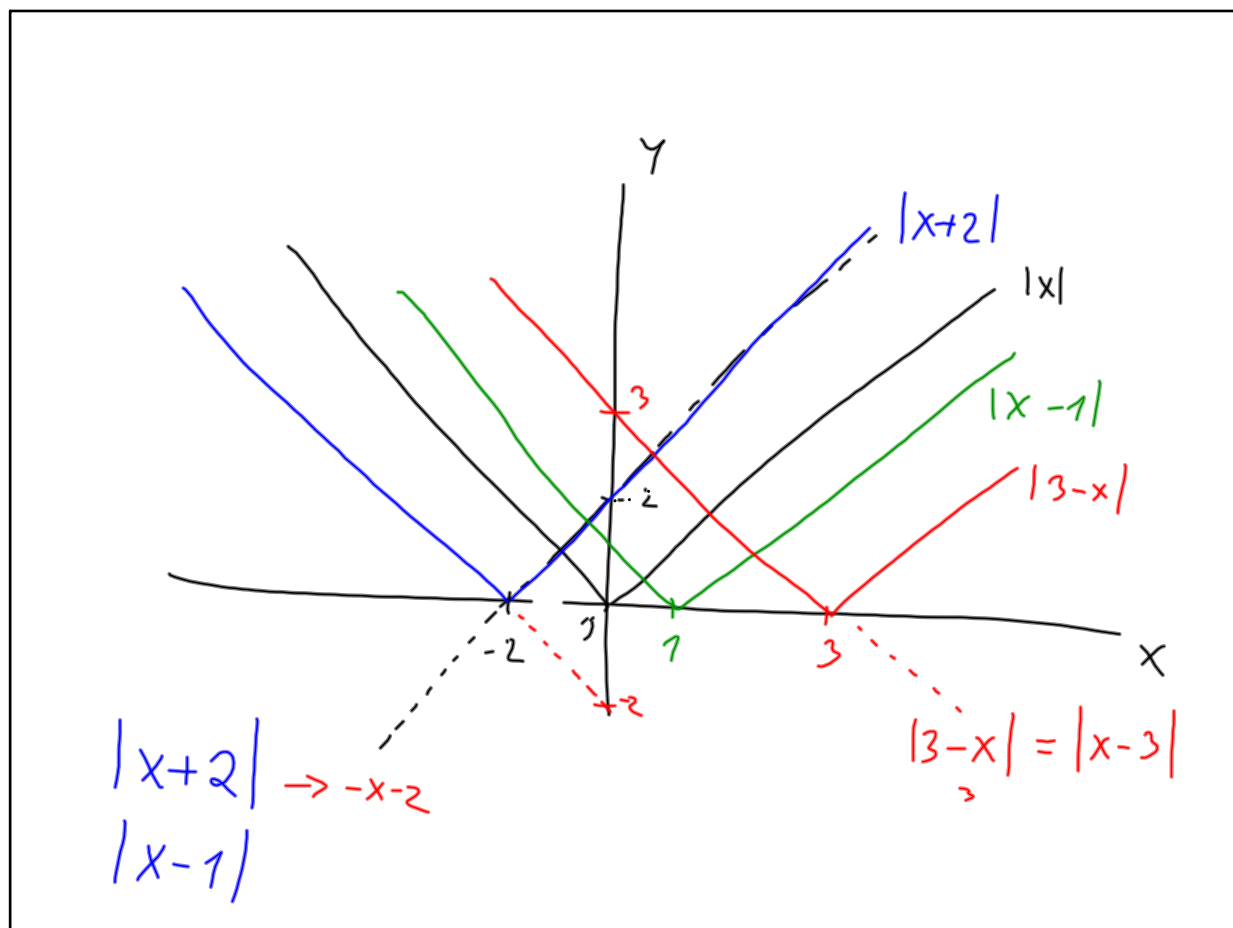
1 22-10:22



1 22-10:29



1 22-10:36



$$|x - \sqrt{3} + 1| = 2 - \sqrt{3}$$

$$x - \sqrt{3} + 1 = 0$$

$$x = \sqrt{3} - 1$$

$$2\sqrt{3} - 3 < \sqrt{3} - 1$$

$$\sqrt{3} < 2$$

$$(-\infty; \sqrt{3} - 1) : -x + \sqrt{3} - 1 = 2 - \sqrt{3}$$

$$2\sqrt{3} - 3 = x$$

$$K_1 = \{2\sqrt{3} - 3\}$$

$$(\sqrt{3} - 1; \infty) : x - \sqrt{3} + 1 = 2 - \sqrt{3}$$

$$x = 1$$

$$K_2 = \{1\}$$

$$K = K_1 \cup K_2 = \{2\sqrt{3} - 3; 1\}$$

1 25-8:35

$$|1 - x| = -2$$



$$K = \{\}$$

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1 25-8:43

$$-3|x-1| > -6 \quad | :(-3)$$

$$|x-1| < 2$$

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pro: $(-\infty; 1)$: $-x+1 < 2$
 $x > -1 \quad K_1 = (-1; 1)$



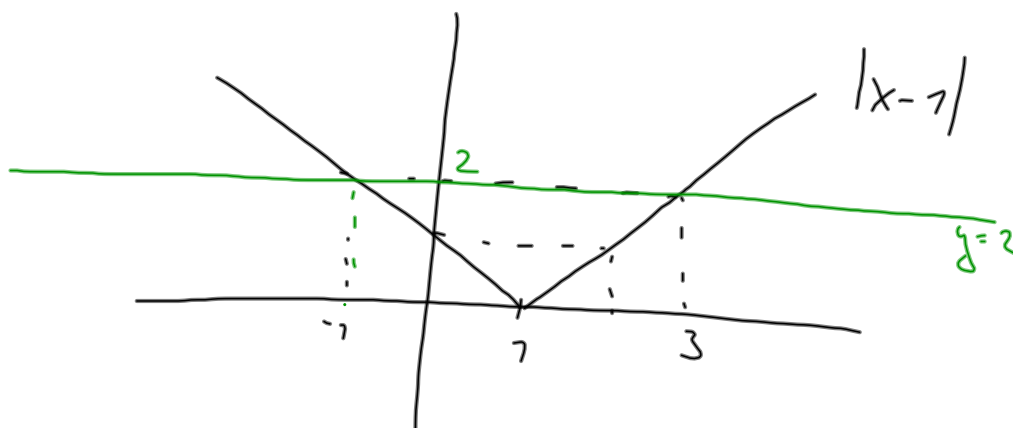
pro: $(1; \infty)$: $x-1 < 2$
 $x < 3$



$K = K_1 \cup K_2 = (-1; 3)$

1 27-8:59

$$|x-1| < 2$$



1 27-9:08

$$|7-4x|+2=1$$

$$|7-4x| = -1 \quad \text{NR}$$

$\downarrow$
 $\frac{7}{4}$

pro $x \in (-\infty; \frac{7}{4})$

$$7-4x = -1$$

$$8 = 4x$$

$$x = 2$$

$K_1 = \{\}$

pro $x \in (\frac{7}{4}; \infty)$

$$-7+4x = -1$$

$$4x = 6$$

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

$K_2 = \{\}$

$K = K_1 \cup K_2 = \{\}$

1 27-9:10

$$2(x+1) = |x-1|$$

$\downarrow$
 $-1 +$

pro: $(-\infty; 1)$:

$$2(x+1) = -x+1$$

$$3x = -1$$

$$x = -\frac{1}{3}$$

$K_1 = \{-\frac{1}{3}\}$

pro $x \in (1; \infty)$:

$$2(x+1) = x-1$$

$$x = -3$$

$K_2 = \{\}$

$K = \{-\frac{1}{3}\}$

1 27-9:15

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$$\{x \in \mathbb{R}; x > -6\}$$

$$(-6; \infty)$$

1 27-9:20

$$|x-2| = 2-x$$

$$\downarrow$$

$$-2 +$$

pro $x \in (-\infty; 2)$:

$$-x+2 = 2-x$$

$$0=0$$

$$\underline{K_1 = (-\infty; 2)}$$

pro $x \in [2; \infty)$

$$x-2 = 2-x$$

$$2x = 4$$

$$\underline{x = 2}$$

$$\underline{K_2 = \{2\}}$$

$$\underline{\underline{K = K_1 \cup K_2 = (-\infty; 2]}}$$

1 27-9:22

$$|x+1| - |1-x| + 2 = x$$

$$\begin{array}{cc} \downarrow & \downarrow \\ \ominus -1 \oplus & \oplus 1 \ominus \end{array}$$

$$\textcircled{1} \text{ pro } x \in (-\infty; -1)$$

$$(-x-1) - (1-x) + 2 = x \quad \underline{x=0} \quad K_1 = \{\}$$

$$\textcircled{2} \text{ pro } x \in (-1; 1)$$

$$(x+1) - (1-x) + 2 = x \quad \underline{x=-2} \quad K_2 = \{\}$$

$$\textcircled{3} \text{ pro } x \in (1; \infty):$$

$$(x+1) - (-1+x) + 2 = x \quad \underline{x=4} \quad K_3 = \{4\}$$

$$\underline{\underline{K = \{4\}}}$$

1 27-9:26

$$|4-x| - |2x+3| = 7$$

$$\begin{array}{cc} \downarrow & \downarrow \\ +4 - & -(\frac{3}{2}) + \end{array}$$

$$\textcircled{1} \text{ pro } x \in (-\infty; -\frac{3}{2}):$$

$$(4-x) - (-2x-3) = 7 \quad \underline{x=0} \quad K_1 = \{\}$$

$$\textcircled{2} \text{ pro } x \in (-\frac{3}{2}; 4):$$

$$(4-x) - (2x+3) = 7 \quad \underline{x=-2} \quad K_2 = \{\}$$

$$\textcircled{3} \text{ pro } x \in (4; \infty):$$

$$(-4+x) - (2x+3) = 7 \quad \underline{x=-14} \quad K_3 = \{\}$$

$$\underline{\underline{K = \{\}}}$$

1 27-9:32

$$|x+2| = 4|x-3|$$

$$\begin{array}{ccc} \downarrow & & \downarrow \\ -(-2) + & & -3 + \end{array}$$

pro $x \in (-\infty; -2)$:

$$(-x-2) = 4(-x+3)$$

$$x = \frac{14}{3}$$

pro $x \in \langle -2; 3 \rangle$:

$$(x+2) =$$

$$K_1 = \{\}$$

1 27-9:36