

ES 31

$$4x + 12 < 6 - 14x$$

$$4x + 14x < -12 + 6$$

$$18x < -6$$

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$$\frac{18x}{18} < \frac{-6}{18}$$

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

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ES 33

$$5x - (x - 2) < 4x - 7$$

$$5x - x - 4x < -7 - 2$$

$$0x < -9 \quad \text{IMP.}$$

$$S = \{\forall x \in \mathbb{R}\}$$

ES 35

$$\frac{1}{3}x - \frac{5}{2} \leq 0$$

$$3 \cdot \frac{1}{3}x \leq \frac{5}{2} \Rightarrow x \leq \frac{15}{2}$$

$$S = \{x \leq \frac{15}{2}\}$$

ES 37

$$3 - (x + 5) < 4(1 - x) + 9$$

$$-x < -3 + 5 + 4 - 4x + 9$$

$$S = \{x < 5\}$$

$$\frac{3x}{3} < \frac{15}{3}$$

ES 39

$$x + (x+1)(x+3) < x^2 + 5 + 4x$$

$$x + x^2 + 3x + x + 3 < x^2 + 5 + 4x$$

$$S = \{x < 2\}$$

$$x < 2$$

ES 41

$$x(x+2) > (x-1)^2 + 2$$

$$x^2 - 2x > x^2 + 1 - 2x + 2$$

$$S = \{\forall x \in \mathbb{R}\}$$

$$0x > 3 \quad \text{IMP}$$

ESERCIZI DAL 43

es 43

$$x(x-4) + \frac{x}{2} \leq x - x(\frac{3}{2} - x)$$

$$x^2 - 4x + \frac{x}{2} \leq x - \frac{3}{2}x + x^2$$

$$-14x \leq -7 \quad -4x + \frac{3}{2}x \leq -7/2$$

$$-14x \leq -7$$

$$\frac{-7x}{2} \leq \frac{-7}{2}$$

$$\frac{14x}{14} \geq \frac{7}{14}$$

$$S = \{x \geq \frac{1}{2}\}$$

$$-x \leq -1$$

$$x \geq 1$$

$$S = \{x \geq 1\}$$

es 45

$$\frac{1}{3}(x-3) - \frac{x+1}{6} \geq -2$$

$$\frac{1}{3}x - 1 - \frac{1}{6}x - \frac{1}{6} \geq -2$$

$$\frac{1}{6}x \geq -\frac{5}{6}$$

$$S = \{x \geq 5\}$$

es 47

$$(x - \sqrt{2})(x + \sqrt{2}) \geq x(x-6)$$

$$x^2 - 2 \geq x^2 - 6x$$

$$\frac{6x}{6} \geq \frac{2}{6} \quad S = \{x \geq 1/3\}$$

es 49

$$\frac{2-3x}{12} - \frac{1-2x}{6} \geq \left(\frac{x}{3} + 2\right) \cdot 12$$

$$2 - 3x - 2 + 4x \geq 4x + 24x$$

$$\frac{+27x}{+27} \geq \frac{+24x}{+24} \quad S = \{x \geq 0\}$$