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$$1) |x+1| + 2x = 7 \longrightarrow \text{HP} = \{2\}$$

$$\bullet x > -1$$

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

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

$$3x = 6$$

$$x = 2$$

$$2 > -1$$

$$\bullet x < 1$$

$$-x-1 = 7-2x$$

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

$$x = 8$$

$$8 > 1$$

$$2) |3x+4| = x-8 \longrightarrow \text{HP} = \{ \}$$

$$\bullet 3x+4 \geq 0$$

$$3x \geq \frac{-4}{3}$$

$$\text{Maka, } 3x+4 = x-8 \quad (\text{tm})$$

$$3x-x = -8-4$$

$$2x = -12$$

$$x = -6$$

$$\bullet 3x+4 < 0$$

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

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

$$\text{Maka, } -3x-4 = x-8 \quad (\text{tm})$$

$$-3x+x = -8+4$$

$$-4x = -4$$

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

$$x = 1$$

$$3) |x+3| \leq |2x-3| \longrightarrow \text{HP} = \{x \mid x \leq 0, x \geq 6\}$$

$$(x+3)^2 \leq (2x-3)^2$$

$$(x+3)^2 - (2x-3)^2 \leq 0$$

$$(x+3+2x-3)(x+3-2x+3) \leq 0$$

$$(3x)(-x+6) \leq 0$$

$$3x \leq 0$$

$$x \leq 0$$

$$\frac{0}{3}$$

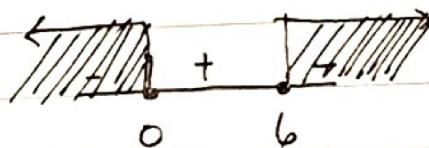
$$x \leq 0$$

$$-x+6 \leq 0$$

$$-x \leq 0-6$$

$$-x \leq 6$$

$$x \leq 6$$



$$4) \quad |3x+1| - |2x+4| > 10$$

$\xleftarrow{-\frac{(3x+1)}{-(2x+4)}} \quad x < -2$
 $\quad \xrightarrow{-\frac{(3x+1)}{2x+4}} \quad -2 \leq x < -\frac{1}{3}$
 $\quad \xrightarrow{\frac{3x+1}{2x+4}} \quad x > -\frac{1}{3}$

• $x < -2$

$$-(3x+1) + (2x+4) < 10$$

$$-3x - 1 + 2x + 4 < 10$$

$$-x + 3 < 10$$

$$-x < 7 \quad \bullet x > -\frac{1}{3}$$

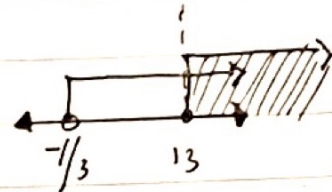
$$x < -7 \quad 3x+1 - (2x+4) > 10$$

$$3x+1 - 2x - 4 > 10$$

$$x - 3 > 10$$

$$x > 10 + 3$$

$$x > 13$$



• $-2 \leq x < -\frac{1}{3}$

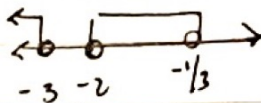
$$-(3x+1) - (2x+4) < 10$$

$$-3x - 1 - 2x - 4 < 10$$

$$-5x - 5 < 10$$

$$-5x < 15$$

$$x < -3 \text{ (TM)}$$



$$\left\{ x / x - \frac{1}{3} \leq x < 13, -7 < x < -2 \right\}$$

5) $|x^2 + x - 1| \leq 1$

a) $-(x^2 + x - 1) \leq 1 \rightarrow x^2 + x - 1 \geq -1$

$$x^2 + x \geq 0$$

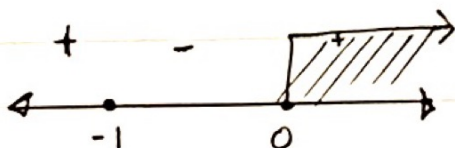
$$x(x+1) \geq 0$$

$$\rightarrow x(x+1) = 0$$

$$x = 0 + 1$$

$$= 0$$

$$x = -1$$



$$HP_a = \left\{ x / x \leq 1, \text{ atau } x \geq 0 \right\}$$

$$b) x^2 + x - 1 \leq 1 \longrightarrow x^2 + x - 2 \leq 0$$

$$x^2 + x - 2 \leq 0$$

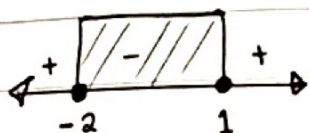
$$(x + 2)(x - 1) \leq 0$$

$$\rightarrow x + 2 = 0$$

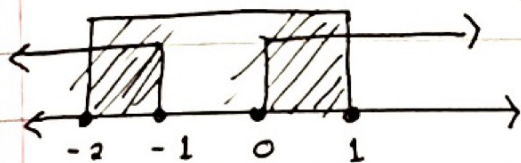
$$x = -2$$

$$x - 1 = 0$$

$$x = 1$$



$$HP_b = \{x/x - 2 \leq x \leq 1\}$$



$$HP_a \cap HP_b = HP_{semua}$$

$$HP_s = \{x/x - 2 \leq x \leq 1, \text{ atau } 0 \leq x \leq 1\}$$