

13)

Έστω  $x \in \mathbb{N} \rightarrow$  φυσικά αριθμοί

5.117

 $\in \rightarrow$  ανήκει

$$114 < x < 135 \quad (1)$$

$$\forall x : 15 \leadsto u = 6$$

$$114 < 15n + 6 < 135 \quad (\stackrel{-6}{=})$$

$$108 < 15n < 129 \quad (\stackrel{:15}{=})$$

$$\left. \begin{array}{l} 7,2 < n < 8,6 \\ \text{Έστω } n \in \mathbb{N} \end{array} \right\} n = 8$$

$$\text{Άρα } \Delta = 15 \cdot 8 + 6 = 120 + 6 = \boxed{126}$$

$$\Delta = 8 \cdot \pi + u$$

$$\boxed{\Delta = 15 \cdot n + 6}$$

16) 8)  $4(3x-5) > 3(4x+5) (=)$

5.117

$$12x - 20 > 12x + 15 (=)$$

$$12x - 12x > 15 + 20 (=)$$

$0 > 35$

Αδύνατο

ε)  $\frac{2x+1}{6} - x < \frac{3-2x}{3} \cdot 6 > 0 (=)$

~~6~~  $\frac{2x+1}{\cancel{6}} - 6x < \frac{2}{\cancel{6}} \frac{3-2x}{\cancel{3}} (=)$

$$2x+1-6x < 2(3-2x) (=)$$

$$-4x+1 < 6-4x (=)$$

$$-4x+4x < 6-1 (=)$$

$$0 < 5$$
Ποσιν ισχύει

16) 52

5.117

$$1 - \frac{1}{2} \left( x + \frac{2}{3} \right) < \frac{x+4}{6} \quad (\text{=} \text{=} \text{=} \text{ } 6 > 0)$$

$$6 \cdot 1 - \cancel{6} \cdot \frac{1}{\cancel{2}} \left( x + \frac{2}{3} \right) < \cancel{6} \cdot \frac{x+4}{\cancel{6}} \quad (\text{=})$$

$$6 - 3x - \cancel{3} \cdot \frac{2}{\cancel{3}} < x + 4 \quad (\text{=})$$

$$4 - 3x < x + 4 \quad (\text{=})$$

$$-3x - x < 4 - 4 \quad (\text{=}) \quad (-4) < 0 \quad (\text{=}) \quad -4x < 0 \quad (\text{=})$$

$$\frac{-4x}{-4} > \frac{0}{-4} \quad (\text{=})$$

$x > 0$

17) θ) Να βρεθούν οι κοινές λύσεις (συναρτήσεις)

σ. 117

$$\begin{cases} 4x + 3 < 9 + 5x \\ \text{και} \\ 1 - x < 2x + 7 \end{cases}$$

ως λύση ξεχωριστά

$$4x + 3 < 9 + 5x \quad (\Rightarrow)$$

$$4x - 5x < 9 - 3 \quad (\Rightarrow)$$

$$-x < 6 \quad (\Rightarrow)$$

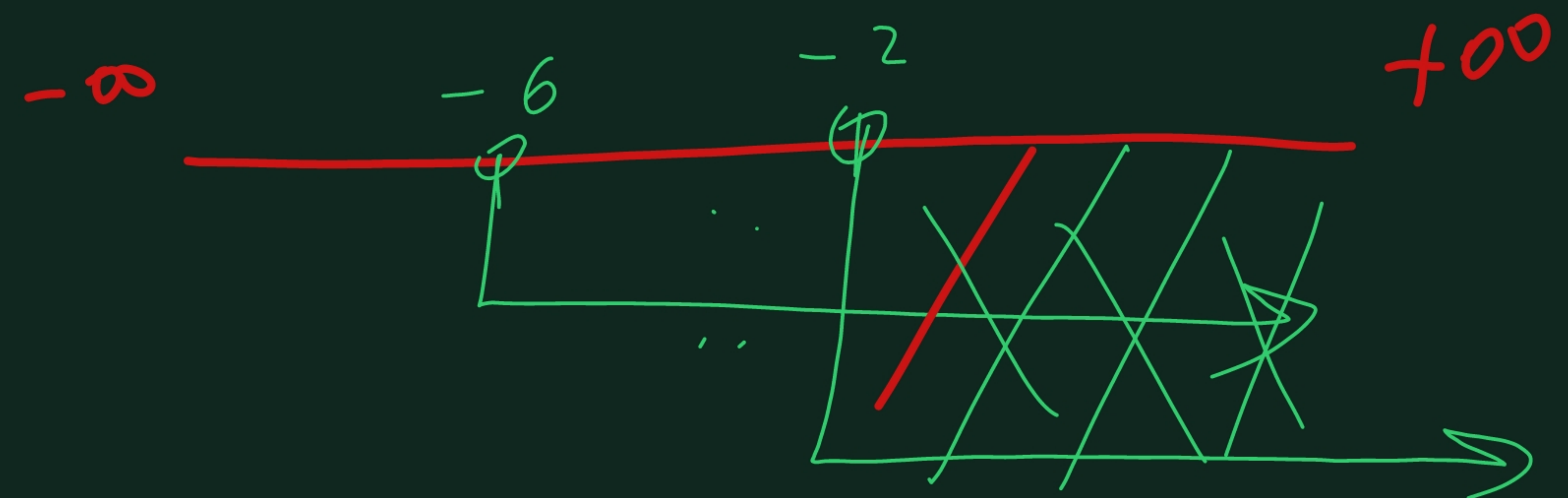
$$x > -6$$

Αρα

$$x > -2$$

ως συνάρτηση

$$\begin{aligned} 1 - x < 2x + 7 & (\Rightarrow) \\ -x - 2x < 7 - 1 & (\Rightarrow) \\ -3x < 6 & (\Rightarrow) \end{aligned}$$
$$\frac{-3x}{-3} > \frac{6}{-3}$$
$$x > -2$$



17) δ)

σ. 117

$$\begin{cases} 2x + 5 < \frac{x}{2} + 2 \\ \frac{x-1}{2} + 1 > x + \frac{1}{3} \end{cases}$$

$$2x + 5 < \frac{x}{2} + 2 \quad (2 > 0) \quad (==)$$

$$2 \cdot 2x + 2 \cdot 5 < 2 \cdot \frac{x}{2} + 2 \cdot 2 \quad (==)$$

$$4x + 10 < x + 4 \quad (==)$$

$$4x - x < 4 - 10 \quad (==)$$

$$3x < -6 \quad (3 > 0) \quad \frac{3x}{3} < \frac{-6}{3}$$

$$x < -2$$

$$\frac{x-1}{2} + 1 > x + \frac{1}{3} \quad (6 > 0) \quad (==)$$

$$6 \cdot \frac{x-1}{2} + 6 \cdot 1 > 6 \cdot x + 6 \cdot \frac{1}{3} \quad (==)$$

$$3(x-1) + 6 > 6x + 2 \quad (==)$$

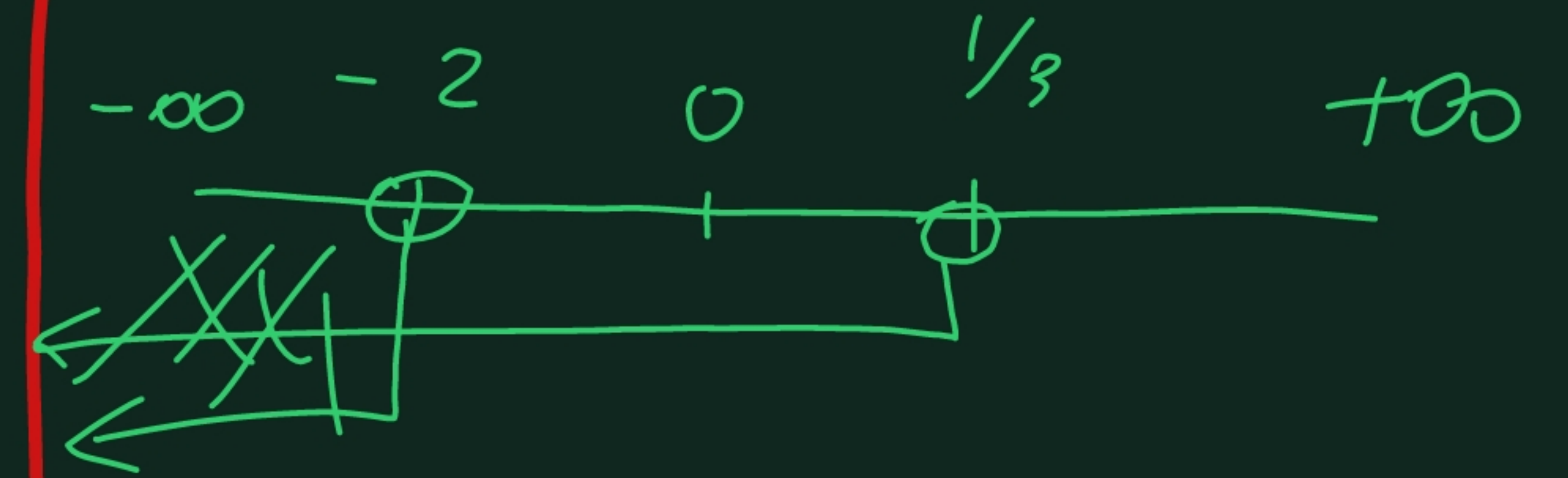
$$3x - 3 + 6 > 6x + 2 \quad (==)$$

$$3x - 6x > 2 + 3 - 6 \quad (==)$$

$$-3x > -1 \quad (-3 < 0) \quad (==)$$

$$\frac{-3x}{-3} < \frac{-1}{-3} \quad (==) \quad x < \frac{1}{3}$$

Συναρτηθεῖς ω



$$\boxed{\text{Αρα } x < -2}$$





