α. Πρέπει $x + 2 \geq 0 \Rightarrow x \geq -2$. Έχουμε λοιπόν

$$|x - 3| = x + 2 \Rightarrow x - 3 = \pm(x + 2)$$

- $x - 3 = x + 2 \Rightarrow x - x = 2 + 3 \Rightarrow 0x = 5$ αδύνατη.
- $x - 3 = -x - 2 \Rightarrow x + x = -2 + 3 \Rightarrow 2x = 1 \Rightarrow x = \frac{1}{2}$ δεκτή λύση.

β. Πρέπει $2x - 5 \geq 0 \Rightarrow 2x \geq 5 \Rightarrow x \geq \frac{5}{2}$. Έχουμε

$$|4x - 1| = 2x - 5 \Rightarrow 4x - 1 = \pm(2x - 5)$$

- $4x - 1 = 2x - 5 \Rightarrow 4x - 2x = 1 - 5 \Rightarrow 2x = -4 \Rightarrow x = -2$ απορρίπτεται.
- $4x - 1 = -2x + 5 \Rightarrow 4x + 2x = 5 + 1 \Rightarrow 6x = 6 \Rightarrow x = 1$ απορρίπτεται.

άρα η εξίσωση είναι σδύνατη.

γ. Πρέπει $4 - 7x \geq 0 \Rightarrow -7x \geq -4 \Rightarrow x \leq \frac{4}{7}$.

$$|2x - 3| = 4 - 7x \Rightarrow 2x - 3 = \pm(4 - 7x)$$

- $2x - 3 = 4 - 7x \Rightarrow 2x + 7x = 4 + 3 \Rightarrow 9x = 7 \Rightarrow x = \frac{7}{9}$ δεκτή.
- $2x - 3 = -4 + 7x \Rightarrow 2x - 7x = -4 + 3 \Rightarrow -5x = -1 \Rightarrow x = \frac{1}{5}$ δεκτή.

δ. Πρέπει $\frac{x+3}{4} \geq 0 \Rightarrow x + 3 \geq 0 \Rightarrow x \geq -3$.

$$\left|\frac{x}{2} - 1\right| = \frac{x + 3}{4} \Rightarrow \frac{x}{2} - 1 = \pm\frac{x + 3}{4}$$

- $\frac{x}{2} - 1 = \frac{x+3}{4} \Rightarrow 4 \cdot \frac{x}{2} - 4 \cdot 1 = 4 \cdot \frac{x+3}{4} \Rightarrow 2x - 4 = x + 3 \Rightarrow 2x - x = 3 + 4 \Rightarrow x = 7$ δεκτή.
- $\frac{x}{2} - 1 = -\frac{x+3}{4} \Rightarrow 4 \cdot \frac{x}{2} - 4 \cdot 1 = -4 \cdot \frac{x+3}{4} \Rightarrow 2x - 4 = -x - 3 \Rightarrow 2x + x = -3 + 4 \Rightarrow 3x = 1 \Rightarrow x = \frac{1}{3}$ δεκτή.