

**α)** Είναι:

$$\begin{aligned} |y-2| < 1 &\Leftrightarrow -1 < y-2 < 1 \Leftrightarrow \\ \Leftrightarrow -1+2 < y-2+2 < 1+2 &\Leftrightarrow \\ \Leftrightarrow 1 < y < 3 &\Leftrightarrow y \in (1, 3) \end{aligned}$$

**β)** Ισχύει ότι:

$$\begin{aligned} 1 < y < 3 &\Leftrightarrow \\ \Leftrightarrow (1 < y \text{ και } y < 3) &\Leftrightarrow \\ \Leftrightarrow (0 < y-1 \text{ και } y-3 < 0) & \end{aligned}$$

Άρα:

$$|y-1| = y-1 \text{ και } |y-3| = -(y-3) = 3-y$$

Τότε:

$$K = \frac{|y-1|+|y-3|}{2} = \frac{y-1+3-y}{2} = \frac{2}{2} = 1$$