1. Solve : $|2x-3| < |x+2|$

$$-|x+2| < 2x-3 < |x+2|$$

CASE-1 $\quad x+2 \geq 0$

$$\Rightarrow -(x+2) < 2x-3 < x+2$$

$$\Rightarrow -x-2 < 2x-3 < x+2$$

$$\Rightarrow 1 < 3x \text{ and } x < 5$$

$$\Rightarrow x \in \left(\frac{1}{3}, 5\right)$$

CASE-2 $\quad x+2 < 0$

$$\Rightarrow (x+2) < 2x-3 < -(x+2)$$

$$\Rightarrow -x-2 > 2x-3 > x+2$$

$$\Rightarrow 1 > 3x > 5 \quad \Rightarrow 1 > 3x \text{ and } x > 5$$

$$\Rightarrow x \in \{\phi\}$$

union of both cases gives

$$x \in \left(\frac{1}{3}, 5\right)$$