

QUESTION

Determine the values of x satisfying $x - 2 < 1 - x < 2x$.

ANSWER

$$-2 + x < 1 - x < 2x$$

$$-2 + x < 1 - x \Rightarrow 2x < 3, \quad x < \frac{3}{2}$$

$$1 - x < 2x \Rightarrow 3x > 1, \quad x > \frac{1}{3}$$

$$\text{so the solution is } \frac{1}{3} < x < \frac{3}{2}.$$