

$$\begin{aligned}
 \mathbf{6.} \quad & -2 - 0.01 \leq \frac{1}{x} \leq -2 + 0.01 \\
 & -\frac{1}{2.01} \geq x \geq -\frac{1}{1.99} \\
 & -0.5025 \leq x \leq -0.4975
 \end{aligned}$$