Question: Solve the inequality: $(|x^2 - 81|) / (x^2 - 36x) < 0$. Put your answer in \boxed{}
Correct Answer: (0,9) ∪ (9,36)

Round 1

Model 1: Factored $|x^2 - 81| = |(x - 9)(x + 9)|$ and $x^2 - 36x = x(x - 36)$, …, the answer is \boxed{(-∞, -9) ∪ (-9, 0) ∪ (9, 36)}

Model 2: Case 1: $x^2 - 81 \geq 0 \rightarrow x \leq -9$ or $x \geq 9$; Case 2: $x^2 - 81 < 0 \rightarrow -9 < x < 9$, …, \boxed{(0,9)}

Model 3: Found roots: $x = \pm 9$ (numerator), $x = 0$ and 36 (denominator), …, the answer is \boxed{(0.9)}

Round 2

Model 1: Re-analyzed sign of $|x^2 - 81|$: positive outside (-9, 9), …., the answer is \boxed{(-∞, -9) ∪ (-9, 0) ∪ (9, 36)}

Model 2: When numerator is positive and denominator negative. $|x^2 - 81| > 0$ when $x < -9$ or $x > 9$, Denominator < 0, .. , (0, 9) is the correct answer

Model 3: Analyzed sign of numerator: negative when $-9 < x < 9$, …, \boxed{(-∞, -9) ∪ (-9, 0) ∪ (0, 36) ∪ (36, ∞)}