Q.No.1:- Find all points of Inflection when \( f(x) = \cos x + \sqrt{3} \sin x \), \( 0 \leq x \leq 2\pi \).

Final Answer (1 point): _________

Work Shown (2 points):
Q.No.2: Find absolute maxima and absolute minima of $f(x) = |x^3 - 9x|$ in $[-2, 3]$.

Final Answer (1 point): _________

Work Shown (2 points):
Q.No.3:- Find \( \lim_{x \to \infty} \left( \frac{x^2 + 2}{x - 1} \right)^x \)

Final Answer (1 point): 

Work Shown (2 points):
Q.No.4: A window is in the form of a rectangle surmounted by a semicircle with total perimeter of 100\(\pi\) cm. In order to have maximum light, find the dimensions of rectangle.

Final Answer (1 point): 

Work Shown (2 points):
Q.No.5:- If $G(x)$ is an antiderivative of $g(x) = \frac{x \csc^2(\pi x) - x + 1}{x}$, and the graph of $G(x)$ passes through the point $(\frac{1}{4}, 0)$. Find $G(x)$.

Final Answer (1 point): __________

Work Shown (2 points):