



1. If each of the two functions f , g where $f(x) = 2x + a$, $g(x) = bx + 3$ is an inverse function to the other , then find the value of each of a and b
2. Find graphically in \mathbb{R} the solution set of the following inequality , then verify the result algebraically : $|x - 1| < 2$
3. Draw the curve of the function f where $f(x) = 1 - |x + 1|$, $x \in \mathbb{R}$, then from the graph determine the range , the type of the function whether it is even , odd or neither even nor odd and discuss the monotony of the function.
4. If $\lim_{x \rightarrow 1} \left(\frac{x^2 + ax + b}{x - 1} \right) = 5$, find the value of each of a and b

