Answer on Question#35087 – Math – Calculus

Question.

Graph of y=x - mod x lies in 3rd quardant only. Justify.

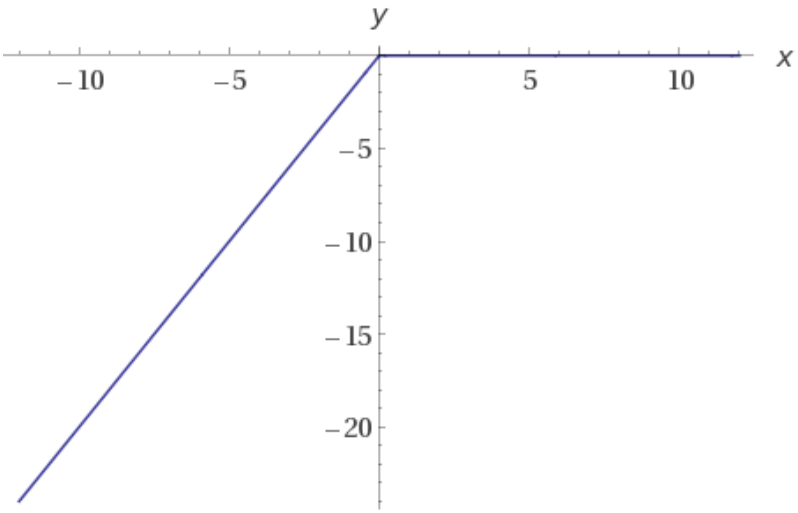
Solution.

We have the function $y = f(x)$, $f(x) = x - |x|, x \in R$.

So, let's see which values are obtained $f(x)$ for $x \in R$.

a) $x > 0$:
$f(x) = x - |x| = x - x = 0.$
b) $x = 0$:
$f(x) = 0 - |0| = 0.$
c) $x < 0$:
$f(x) = x - |x| = x - (-x) = 2x.$

Sketch the graph of $y = x - |x|$:



(x from −10 to 10)

As we can see, all values our function is equal zero for all $x > 0$.