

MATH4564 - Homework No2-Quiz No1 - Fall 03 - Konaté

Notice: Show your work. A right answer with a bad reasoning will be considered as wrong. Use a computer and any dialect to perform your graphing.

1• Say if the function defined for all x is even or odd:

a• $f(x) = x + \sin x$ (**5 points**)

b• $g(x) = xe^x$; (**5 points**)

2• Write the function in terms of steps functions:

$$f(x) = \begin{cases} -x + 2 & 0 < x < 3 \\ 2x - 1 & 3 < x < +\infty \end{cases} \quad (\mathbf{10 \text{ points}})$$

3• Consider the function:

$$f(x) = \begin{cases} -x + 2 & 0 < x < 1 \\ 2x - 1 & 1 < x < 2 \end{cases}$$

a• Find $f_+(x)$ and $f_-(x)$ (**10 points**).

b• Find the expressions of $f_{+,p}(x)$ and $f_{-,p}(x)$ in the interval $]10, 12[$ (**20 points**)

c• Determine the values of $f_{+,p}(10.5)$ and $f_{-,p}(11.5)$ (**20 points**)

d• Plot $f_{+,p}(x)$ and $f_{-,p}(x)$ in the interval $]0, 14[$ (**30 points**).
