Piecewise Functions - Note

Example 1

Consider $f(x)=\begin{cases}\frac{2}{3}x+4, x\le -3\\ x^2-1, x>-3\end{cases}$

(a) Sketch the function.
(b) Determine f(-4), f(-3) , f(-2) , f(0)
(c) Is the function continuous?

Example 2

Consider $f(x)=\begin{cases}x+1, x<-1\\ x^2, -1\le x<1\\ \sqrt{x}, x\ge 1\end{cases}$

(a) Sketch the function.
(b) Determine f(-3), f(-2) , f(-1) , f(0), f(1), f(2)
(c) Is the function continuous?

Example 3

Determine the value of k so that the piecewise function is continuous:

Consider $f(x)=\begin{cases}x^2+4x+k, x<3\\ 2-x, x\ge 3\end{cases}$

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